RESEARCH AND THE RESEARCH DEGREE:
TRANSDISCIPLINARITY AND CREATIVE INQUIRY

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> While so much that universities teach today is new and up-to-date, the presuppositions or premises of thought upon which all our teaching is based are ancient, and, I assert, obsolete. (G. Bateson, 2002)
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> We need a kind of thinking that relinks that which is disjointed and compartmentalized, that respects diversity as it recognizes unity, and that tries to discern interdependencies. We need a radical thinking (which gets to the root of problems), a multidimensional thinking, and an organizational or systemic thinking… (Morin & Kern, 1999, p. 130).

Introduction

There is little question that at the beginning of the 21st century the world is undergoing remarkable changes. Not the end of history, perhaps, but perhaps the end of one age, and the intimations of a new one. It is also painfully clear that our educational systems do not prepare us for the emerging pluralistic, interconnected, complex world. In this paper I address an admittedly small and rarified sliver of the educational process, namely the doctoral degree, with its focus on the training of researchers. Underlying my effort here is the larger question of how we can think about the issues facing us today, and the importance of bringing greater awareness to the issue of how we approach inquiry, and how we can make it more relevant in the context of both personal and social transformation.

The Ph.D. degree

In the United States, the Ph.D degree is defined by the Association of American Universities (Association of American Universities, 1998) as a research degree that indicates the recipient is capable of doing *original* research and scholarship. Likewise, the Council of Graduate Schools (Council of Graduate Schools, 1995) states that the central purpose of doctoral education is to prepare a student for a lifetime of intellectual inquiry that manifests itself in creative scholarship and research.

The Ph.D. is the culminating educational degree for individuals who are to become researchers. But the research degree *par excellence* itself needs research, and perhaps rethinking. Lovitts (p. 35) has shown that in the US "many graduate students have difficulty making the transition from being good course-takers to being creative independent researchers" (Lovitts, 2005). Given the current institutional focus on producing students who are good course- and test-takers, this should come as no surprise.

All over the world, serious questions and concerns have arisen over the viability of present educational practices. In the US, critics have argued that education has become increasingly commercialized, test-oriented, and even part of an academic-military-industrial complex (Aronowitz, 2001; Giroux, 2007; Readings, 1997). In a misguided effort to raise standards, education has narrowly focused on measuring outcomes, assessment, and metrics in an effort to introduce an element of rigor and competence. Discussing the situation in England, plagued with similar problems, Abbs (p. 3) writes that "in our schools and universities we have become pathologically obsessed with quantitative measurement rather than the qualitative flow of meaning" (Abbs, 2003).

Students born after 1970, variously referred to as GenerationMe or Millennials, have grown up in an educational system stressing testing and grading and with economic pressures, due to the cost of education and concerns about getting a job, that are considerably greater than those of their predecessors. They have been trained to be more concerned with tests, grades, and getting the right answer than with doing original, imaginative yet rigorous work (Strauss & Howe, March 30, 2007; Twenge, 2006).

A focus on testing and regurgitating the correct answer—what elsewhere I have referred to as "reproductive education" (Montuori, 2006) -- simply does not prepare students become good independent, resourceful thinkers, let alone prepare them to address the complexity of the world they are facing. In her research on academic success, Lovitts found that *creativity* was a key factor in the development of independent researchers. Creativity is tellingly associated with such personal characteristics as independence of judgment, tolerance for ambiguity, and a preference for complexity (Barron, 1995), all clearly relevant to the ability to do independent research (DeRoma, Martin, & Kessler, 2003).

Interestingly, the issue of creativity itself is almost never explicitly addressed in graduate academic programs, despite the extensive academic research on the subject (Amabile, 1996; Barron, 1988; Barron, Montuori, & Barron, 1997; Lovitts, 2005; Montuori & Purser, 1999; Runco & Pritzker, 1999; Sternberg, 1988). There are a number of reasons for this odd gap, this silence about originality, creativity, and the creative process in academic research (Guetzkow, Lamont, & Mallard, 2004). Historically, the philosophy of science and of social science viewed creativity as something completely serendipitous that could not be cultivated or encouraged and perhaps the fact that much of the *popular* discourse on creativity has been somewhat less than respectable has also played a role in keeping creativity out of the discourse of graduate research (Montuori, 2006).

One of the more pointed criticisms directed at academia and at the more advanced degrees in particular has to do with the increasing degree of specialization, and indeed hyper-specialization. Hyper-specialization isolates academics and researchers in ever smaller domains in often water-tight compartments (Barfield, 1963; Morin, 2008c; Nicolescu, 2002, 2008b; Wilshire, 1990). This creates a proliferation of different research agendas, languages, theories, and approaches, but little or no effort to connect them, or to find ways of addressing the application of all this knowledge in ways that are not themselves fragmented and partial. Disciplinary hyper-specialization reflects a

reductionistic, atomistic way of thinking, and of conceiving of the world. While this approach has undoubtedly been very successful in some ways, it has also led to the present crisis of modernity. A reductionistic approach, whether in the organization of educational systems in rigid, 'clear and distinct' disciplines, in our thinking, with 'clear and distinct ideas,' and in our understanding of the world, with 'clear and distinct' atoms, is unable to address the complexity of our present situation precisely because it is fundamentally unable connect and contextualize. A transdisciplinary approach therefore requires the cultivation of a way of thinking that actively embraces complexity (Montuori, 2005a; Morin, 2001; Nicolescu, 2002).

This paper discusses the design of a doctoral program in *Transformative Studies* at the California Institute of Integral Studies, an independent private university in California. The starting point was the development of a transdisciplinary degree with an explicit effort to both address creativity and elicit creativity in the students and faculty. The program is designed for individuals who are passionate about researching a leading edge topic outside of the traditional disciplinary confines but at present only have a Masters degree. In many but by no means all of the cases the students are already teaching at colleges and have a strong disciplinary background. The doctoral program therefore offers them an opportunity to get career advancement while doing research in an area and in a manner that reflects their maturity and capacities.

TRANSDISCIPLINARY FOUNDATIONS

> The reform in thinking is a key anthropological and historical problem. This implies a mental revolution of considerably greater proportions than the Copernican revolution. Never before in the history of humanity have the responsibilities of thinking weighed so crushingly on us (Morin & Kern, 1999, p. 132).

The Transformative Studies program does not primarily prepare individuals to participate in disciplines but to address *issues*. These are issues that cannot, in the researcher's opinion, be satisfactorily addressed from the perspective of a single discipline. Particularly important is transdisciplinarity's stress on "in vivo" rather than "in vitro" inquiry, as Nicolescu puts it (Nicolescu, 2008a). In other words, transdisciplinarity is concerned with the relationship between subject/object, theory/knowledge and action, and recognizes that disciplinary knowledge, while invaluable in terms of primary research, almost never addresses the full complexity of real-life situations.

What is transdisciplinarity?

> The transdisciplinary method does not replace the methodology of each discipline, which remains as it is. Instead the transdisciplinary method enriches each of these disciplines, by bringing them new and indispensable insights, which cannot be produced by disciplinary methods. (Nicolescu, 2002)

Nicolescu has made useful introductory distinctions. *Trans*disciplinarity is not *multi*disciplinarity (Nicolescu, 2002, 2008b). It is not approaching a problem from the perspective or lens of a number of different disciplines. Nor is it *inter*disciplinarity, which Nicolescu describes as using the methods of one discipline to inform another.

Transdisciplinarity is perhaps above all a new way of thinking about, and engaging in, inquiry.

The project of transdisciplinarity is an emancipatory one. It provides researchers with a way of thinking and a way of organizing knowledge and informing action that can assist them in tackling the complexity of the world, while at the same time inviting them to come to grips with the role of the inquirer in the process of inquiry. Transdisciplinarity recognizes that we are living in a complex, uncertain, and pluralistic world, and begins to provide us with the tools needed to confront a world that is different than the one hypothesized by Aristotle and Descartes, two of the founders of the present approaches to inquiry in western thought. And because transdisciplinarity clearly recognizes the role of values in inquiry, rather than attempting to suppress or "bracket" them, it engages the inquirer as an active, ethical participant in the world. Gregory Bateson (G Bateson, 1972) rightly spoke of a

revision in scientific thought which has been occurring in many fields, from physics to biology. The observer must be included within the focus of observation, and what can be studied is always a relationship or an infinite regress of relationships. Never a "thing." (p. 246)

Transdisciplinarity is not a lofty ideal divorced from everyday experience. One of the key motivators for transdisciplinarity is its focus on the *practical* applications of knowledge. Let us step back and look at a very down to earth example, so as to avoid the impression that transdisciplinarity is some highly abstract, theoretical, and ultimately "academic" abstraction.

An organization seeks to become more innovative. It has become abundantly clear in recent years that organizational innovation is a complex, multi-leveled process (Purser & Montuori, 1999). In order to foster organizational innovation, it's not sufficient to simply propose a creativity training for employees where they will learn some creativity 'tools' such as lateral thinking. Regardless of whether such a 'tool-based' approach can actually even assist in developing individual creativity, it's simply not enough to have individuals with bright ideas if the organizational systems and culture do not support innovation. If the culture privileges "getting it right the first time," and is therefore risk-averse, if the culture defines 'intelligence' as the ability to critically point out the flaws in an idea, if organizational systems force any attempt at change through the entire organizational chain and require documentation for every step in triplicate, then no matter how much individual creativity is fostered, the organization's overall ability to innovate may not change at all. In fact, one may end up with personnel who are even more frustrated than before. Stories of organizations that systematically squelched brilliant ideas that were later picked up elsewhere are, of course, legion (Amabile, 1998).

Organizational innovation requires a multi-dimensional approach that addresses at least the level of the individual, the group, the organization (both culture and processes), and the larger business environment. This means that the knowledge of creativity and innovation that needs to be brought to bear on the situation will originate in a plurality of

disciplines—individual psychology, group dynamics, organizational theory, strategy, marketing, and so on. The process of creating an environment that is favorable to innovation, and then productizing an idea spans a good number of disciplines. But it is not enough to simply draw on material from a variety of disciplines.

Degrees in Business Administration or International Relations generally consist of a variety of courses that already draw from different disciplines. A degree in International Relations may include courses on the History of Europe since 1900, Macro- and Micro-Economics, Political Theory, Political Psychology, The Intelligence Community, and International Development. A business degree may take courses in Organizational Behavior, Leadership, Group Dynamics, Interpersonal Communication, Creativity and Innovation, Accounting and Finance, Environmental Policy, and Cross-cultural communication. A practitioner in business or diplomacy or policy-making may develop a familiarity in all these different subjects. The reality of work demands a broad background. But from the perspective of Nicolescu's useful differentiation between disciplinary, multi-disciplinary, interdisciplinary, and transdisciplinary approaches, the way that the whole course of study is organized is really still in the shadow of disciplinary fragmentation. Every course is its own little silo, and mostly little or no effort is made at integration. The subjects are taught "*in vitro*," to use Nicolescu's fortuitous phrase, as if in a cognitive test tube. As the essays in this book illustrate, the method of transdisciplinarity is "*in vivo*: " the knower is not a bystander looking at knowledge in its pristine cognitive state, but an active participant, a *being-in-the-world*. The Transdisciplinary approach does not focus exclusively on Knowing, but on the inter-relationship between Knowing, Doing, Being, and Relating (Montuori, 1989; Montuori & Conti, 1993).

The purpose of the kinds of programs I have discussed is to expose students to a variety of essential skills for their work, but the result is more often than not the equivalent of taking a set of courses from different disciplines in the hope that they will somehow make sense and be integrated in the student's actual practice. The focus is still cognicentric, reproductive, and weakly multidisciplinary in Nicolescu's definition: gathering information from disparate disciplines, and then hoping against hope that the student will eventually be able to apply the knowledge and not view it as simply decontextualized information that is forgotten soon after the test. Transdisciplinarity moves away from *in vitro* cognicentrism to the practice of *in vivo* learning for life.

In conclusion, while I have drawn my examples from degrees that have a practitioner orientation, it is also increasingly clear that many of the most significant works published today do in fact draw on a plurality of disciplines, without necessarily succumbing to the temptation of creating totalizing knowledge with a God's eye view from nowhere. The work of Morin (Morin, 2005a, 2005b, 2005c, 2008a, 2008b), Eisler (Eisler, 1987),Bocchi and Ceruti (Bocchi & Ceruti, 2002), Foucault (Foucault, 2001), Taylor (Taylor, 2003), Kauffman (S. Kauffman, 1995; S. A. Kauffman, 2008), Kaufman (Kaufman, 2004), Keeney (Keeney, 1983), Bateson (G Bateson, 1972; G. Bateson, 2002), to name a few, provides a good indication of the intellectual excitement brought by such intellectual "poachers," to use Edgar Morin's phrase.

Transdisciplinarity in the curriculum

Transdisciplinarity can be summarized as having four cornerstones (Montuori, 2005a, 2008a):

1) A focus that is *inquiry-driven* rather than discipline driven. This does not involve a rejection of disciplinary knowledge, but the development of *pertinent* knowledge for the purposes of action in the world.
2) A stress on *the construction of knowledge* through an appreciation of the meta-paradigmatic dimension—in other words, the underlying assumptions that form the paradigm through which disciplines and perspectives construct knowledge. Disciplinary knowledge generally does not question its own paradigmatic assumptions.
3) An understanding of *the organization of knowledge*, isomorphic at the cognitive and the institutional level, the history of reduction and disjunction (what Morin calls "simple thought") and the importance of contextualization and connection (or "complex thought").
4) *The integration of the inquirer in the process of inquiry* (Morin, 2008b). This means that rather than attempting to eliminate the inquirer in an effort to remove subjectivity and bias, the effort becomes one of acknowledging and making transparent the inquirer's assumptions and the process through which s/he constructs knowledge. A fundamental assumption here is that *in order to understand the world we must understand ourselves, and in order to understand ourselves we must understand the world*.

The Transformative Studies program's core curriculum does not provide a traditional disciplinary grounding in the knowledge base of the student's research with a set of specific courses address the student's research interests. Rather, every course offers an opportunity to apply the course material to the student's area of research. Our assumptions is that students entering at the doctoral level are sufficiently grounded in that knowledge base that they can continue to deepen it with self-directed study and with the guidance of their instructors. In their first semester students are encouraged to find as many journals as possible that address their area of inquiry. These journals may not all be in the same discipline, but the point is that they should address the student's chosen area of research. Students are asked to familiarize themselves with the Dominant Disciplinary Discourse (DDD) in their area. As an example, for creativity in the US the DDD would be psychology, for what used to be called "third world" development the DDD is economics, and so on. Students learn the underlying assumptions, theoretical frameworks, key figures, books, and articles, and begin to critique them while also studying alternative approaches and their journals. They are then guided towards publication in the journals that pertain to their research. Papers written for courses can, with the faculty member's help, be oriented towards publication. Even if initially the students are not successful, which is to be expected, this hands-on experience of situating themselves in the discourse and participating in the world of publication gives the transdisciplinary students a degree of confidence that comes from knowing how to approach the disciplinary world.

The focus of the core curriculum is on the development of Creative Inquiry and Transdisciplinarity as guiding approaches to inquiry. Creative Inquiry provides the over-arching frame for the educational experience and the approach to scholarship as a creative process. Transdisciplinarity provides the overall framework for the organization of knowledge.

Transdisciplinary inquiry integrates the inquirer into the inquiry. The role of the inquirer is not bracketed, but rather brought to the fore and the inquirer's assumptions, emotional responses, history and biases are explored and become part of the inquiry. Most importantly, there is a continuing effort to connect the inquiry not only to knowledge-bases and theoretical frameworks, but also to lived experience and action.

Transdisciplinary inquiry is *inquiry-driven*, rather than discipline-driven (Montuori, 2005a). In other words, the questions emerge from a specific issue at hand, often drawn from the inquirer's own experience, not from the pre-existing agenda of the discipline. The challenge therefore is to assess what is *pertinent* knowledge for the inquiry, and learning how to navigate across disciplines in search of that knowledge. Students learn to develop overviews of topics and understand how to engage a new discipline or sub-discipline that may have relevant perspectives on their topic. They become "comprehensivists" to use Buckminster Fuller's term, and this means that while they may lack a specialist's depth and breadth in a specific discipline they have a broader overall understanding of a plurality of disciplines, and can assess how they might inform a specific question.

Transdisciplinarity cannot demand exhaustive knowledge of all disciplines. Indeed, it is increasingly difficult to stay abreast of the developments even in one's own specialization, so exhaustive knowledge is not possible or necessary. The focus here is rather on *understanding how knowledge is created*. This requires a radical approach that goes to the roots of every perspective on an issue and explores its fundamental underlying assumptions, what I call a *meta-paradigmatic* approach, rather than an intra-paradigmatic one where inquiry proceeds without a questioning of the fundamental assumptions guiding it (Montuori, 2005a). A transdisciplinary approach requires grounding in the philosophy of knowledge and of social science (Fay, 1996), so that inquirers can see how different disciplines and sub-disciplines have constructed different understandings of their subject matter. Basic assumptions can be seen in the chosen unit of analysis (the individual in methodological individualism, found in much of psychology, society in the methodological holism found in much of sociology, etc.), synchronic or diachronic approaches, a nomothetic or idiographic approaches, realist and constructivist epistemologies, etc.

With an understanding of the underlying assumptions and the way knowledge is created, along with a solid overview of the disciplines drawn upon and an understanding of the larger intellectual context of the research the inquirer is drawing on (including ongoing debates, critiques, alternative views, and so on), the inquirer can begin to develop pertinent knowledge (Morin, 2001) with coherence and integrity. Clearly, this is an art as

well as a science, and one that needs to be constantly honed. An important side-effect that this larger perspective provides is a degree of epistemological humility because it exposes the inquirer not only to an enormous plurality of perspectives, as well as recognizing that inquiry involves a creative construction of a perspective on a subject on the part of the inquirer.

Transdisciplinarity requires the development of a new conception of, and approach to, knowledge. Students in Transformative Studies are trained in cybernetic epistemology and complex thinking. The fundamental assumption is that the strict organization of knowledge in the traditional university reflects—is technically isomorphic with--a certain organization of thinking. The organization of knowledge in thinking and academia has been guided by the principles of reduction and disjunction originating in Descartes and Aristotle (Morin, 2001). Analysis refers to a process of breaking down an object of inquiry into its constituent parts, and this is mirrored by the development of disciplines that reflect the increasing need for specialization. While this process has been immensely successful, it has also led to certain considerable gaps, particularly in efforts to connect the disparate findings of diverse disciplines (Nicolescu, 2002).

Complex thought and cybernetic epistemology foster a kind of thinking that contextualizes and connects rather than being reductive and disjunctive (Keeney, 1983; Morin, 2008b). Historically a central mission of General Systems Theory and Cybernetics was to develop a language that could cross disciplines and integrate knowledge. Complex thought recognizes the role of the observer in the observation, and concerns itself with situating the subject in its context, recognizing the nature of its relationships, and reflecting on the construction of knowledge and the knower's operations in that process.

The design of the program is as follows: In the first semester, the three courses focus respectively on an *Introduction to Transformative Studies*, which covers cybernetic epistemology and stresses a new way of thinking (complex thought, which includes metacognition) and the development of a new way of thinking about knowledge and inquiry; *Creative Inquiry*, which prepares the students to view scholarship as a creative process as well as a process of self-creation as a scholar, which ranges from exploring one's values to situating oneself in a community of like-minded scholars to finding one's voice; and *Self, Society, and Transformation*, which situates inquiry in a global context and also provides an introduction to the sociology of knowledge, with a specific focus on the inquirer's own background and the way inquiry is shaped (although not determined) by culture, politics, and economics. This course attempts to address among other things Mills's (Mills, 2000) observation that individuals (particularly in the United States)

> ...do not usually define the troubles they endure in terms of historical change and institutional contradiction. The well-being they enjoy, they do not usually impute to the big ups and downs of the societies in which they live. Seldom aware of the intricate connection between the patterns of their own lives and the course of world history, ordinary men do not usually know what this connection means for the kinds of men they are becoming and or the kinds of history making in which they might take part (p.4)

In the second semester, students take an introductory research course, *Varieties of Research Experience*, that utilizes the faculty's own research experiences as examples and opportunities for inquiry and dialogue, and a course on transdisciplinarity, which stresses the development of a pertinent knowledge base. The third course in the second semester is an elective. In the third semester students take a more specialized research methods course, and two electives. In the final semester before advancement to candidacy there are two comprehensive exams. These are essentially the literature review and the methodology chapter of the dissertation proposal. In the fourth and final semester of course-work, the students are assigned dissertation chairs. The chair advises the student while s/he is working on the two comprehensive exams, so that there is ongoing support and guidance as the students moves towards completing the dissertation proposal and eventually writing the dissertation proposal.

Because of the transdisciplinary nature of the program, in all of these courses students are required to bring their own research interests and use them as the focus of the inquiry. For instance, a student working on the role of women and micro-loans in development would bring issues from her field to class and explore how to begin to think in a complex, cybernetic way about them, how to develop a transdisciplinary approach and knowledge-base, how her own social, cultural, economic, political background informs her choices and her thinking about the issues, and so on. Every semester a course integrates the ongoing work, explore one's dissertation research, and dialogue with others. It should be noted that this degree is offered online (asynchronously), and attracts students from all over the world.

TRANS-ASSUMPTIONS

The prefix trans- is central to the program's name, and stands for *across, through and beyond so as to change*. The Transformative Studies program is not only transformative and transdisciplinary. There are four "trans- cornerstones" that inform the core of the program, designed to take students across their own scholarly endeavors and self-creation so as to change themselves, their field, and, to some small extent, the world.

Transformative

Central is the assumption that inquiry is a creative process in which knower and known can be changed by and through the process of knowing and through an ever deepening understanding of the role creativity plays in knower, knowing, and knowledge, and ultimately in the very nature of existence (Bocchi & Ceruti, 2002; Davies, 1989; Kaufman, 2004). Education is not just viewed as *informative* but as potentially *transformative*, changing our way of understanding self and world, and how we act in the world (Kegan, 2000). The transformative dimension also involves the inquirer's self-creation as an independent scholar and as a human being acting in the world. Self-inquiry plays a key role here. The student explores and challenges fundamental assumptions about self, world, how knowledge and thinking are organized, and the nature of action in the world (Kegan, 2000; Montuori, 2006).

Transpersonal

Inquiry is always engaged by humans, and in our program inquiry is mostly *about* humans. We all have implicit assumptions about human nature—what human beings are, what they can be, and how they relate, and these assumptions are strongly influenced by our cultural background (Fay, 1996). Gergen (Gergen, 1994) writes that

> In western culture the individual has long occupied a place of commanding importance. Cultural interests are virtually absorbed by the nature of individual minds- their states of well-being, their tendencies, their capacities, and their shortcomings. Individual minds have served as the critical locus of explanation, not only in psychology, but in many sectors of philosophy, economics, sociology, anthropology, history, literary study and communication (p.1).

Explicit and implicit assumptions about human nature are explored and challenged, to the extent that they inform our policies, theories, and worldviews, as well as our own implicit/explicit personal assumptions about self and world and our understanding of the human capacities for transformation.

The curriculum's working assumptions are that human beings are interconnected open systems, part of a larger social, cultural, ecological, political planetary and cosmic whole, and that, despite emerging efforts, the full extent of human possibilities is largely untapped and by no means fully understood (Ceruti, 2008; Combs, 2002).

Transdisciplinarity

While individual disciplines have made astounding contributions to knowledge, disciplinary fragmentation is problematic because of what it cannot address. This includes existential questions (the Big Questions), emerging areas of inquiry that draw on a multitude of disciplines (ecology, management), and knowledge that is appropriate for action, since lived experience and action in the world cannot be reduced to the purview of one discipline. Transdisciplinary research is increasingly appealing to those researchers who feel that in order to do justice to their topic they cannot remain hemmed in by disciplinary boundaries. Transdisciplinarity traces its roots back at least to the "transversal" sciences such as information theory, cybernetics, and General Systems Theory, whose goal originally it was to develop a way of thinking and a language that would allow researchers to move across disciplines (M. C. Bateson, 2004). Transdisciplinarity complements and integrates disciplinary knowledge and moves through, across and beyond disciplines in a systemic, cybernetic way to draw on existing knowledge and generate new knowledge that is pertinent to the inquiry and integrates the inquirer in the inquiry (Montuori, 2005a; Morin, 1990).

Transcultural

All individuals, and all inquiry, exist in a cultural and historical context. Culture shapes but does not determine our identity and also our inquiry. Particularly in the US, dominant culture appears largely transparent: Situating inquiry in its cultural context can therefore provide us with further insights into the (cultural) assumptions underlying how we have constructed/created our inquiry (the sociology of knowledge). Self-knowledge requires a deep understanding of one's own culture, and this can be achieved most effectively by using encounters with other cultures opportunity for self-inquiry (Geertz, 1973; Hall, 1976; Montuori & Fahim, 2004; Morin, 1991). A guiding assumption is that, unlike

essentialist positions, culture and identity are complex, relational, and evolving creative processes drawing on multiple roots and an ongoing history of interactions. At the beginning of the 21st century, our working assumption is that inquiry cannot be confined to the context of a single nation, but must now be viewed in a larger, transcultural, planetary context (Appiah, 2006; Morin & Kern, 1999).

SCHOLARSHIP: CREATIVE INQUIRY

> Originality is the essence of true scholarship. Creativity is the soul of the true scholar.
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> Nnamdi Azikiwe (1904 - 1996)
> Nigerian president, newspaper editor, and financier
> Speech to Methodist Boy's High School, Lagos, November 11, 1934.
>
> To some it will seem strange and even inappropriate to combine 'objectivity' and 'imagination.' But forms of imaginative rationality are, in fact, what make human objectivity possible. They are what permit us take up various perspectives as a way of criticizing any given position, our own or others'. We do this, as we have seen, by means of different kinds of imaginative acts by envisioning different framings and metaphorical structurings of situations by empathetically taking up the part of others in other to understand what they experience and how various possible actions might affect them, and by exploring the range of possibilities for action open to us.
>
> Imaginative activity of this sort is our sole means for assuming different perspectives and tracing out what they would mean for how we develop our identity, how we affect others, and how we compose our relationships. Such acts of imagination are what allows us to see *that* and *how* things might be different and better. (Johnson, 1993)

When students come into a graduate program, and particularly a doctoral program, the have a set of (often implicit) assumptions about the nature of the educational process. In particular, it is difficult for them to make the transition to independent researchers, fully understand what this entails, and develop not just the knowledge base but the skills and the creativity to engage in original research. A central part of the design of this program, addressed in a first semester course, is to make assumptions about inquiry and the larger educational process explicit, and to develop an attitude of "creative inquiry."

Scholarship in the program is framed as the ability to engage in Creative Inquiry. A scholar, according to customary dictionary definitions, is somebody who has a great deal of knowledge. In the academic context it is someone who has specialized in a particular subject and the word 'scholarly' refers to the ability to engage in one's study in a rigorous and systematic way, accessing and utilizing knowledge in an effective way. Interestingly, we also see that related terms like "scholastic" and "scholasticism" refer to narrow, pedantic, approaches that are quick to quibble about fine points and to criticize the smallest error.

The curriculum aims to develop different scholars who are not scholastic quibblers, but rather creative inquirers. Academic inquiry and scholarship can be profoundly creative and transformative processes (Kincheloe, 1993; Mezirow, 1991; Montuori, 2006, 2008b). The best kinds of scholarship—and the best scholars—embody this creative, transformative process. In this time of planetary transition, creative alternatives are also needed to address the impasse of modernity, and at the start of the 21st century creativity

is beginning to be considered a vital competence (Florida, 2002; Jensen, 2001; Wince-Smith, Spring 2006). But scholarship must not be confined to the development of ideas, theories, and conceptual frameworks. Scholarship can be viewed as a creative, transformative *practice*, a form of self-creation in which our ideas, theories and concepts are not just articulated and disseminated but embodied. Scholarship can become an opportunity to create ourselves in and through the process of inquiry and participation in a community of scholars and in the wider global community.

Creative Inquiry is an attempt to reframe scholarship in such a way that it does not just refer to having a good knowledge-base and good study habits. It stresses the creative dimension of scholarship as active inquiry in the world, frames knowledge as a creative product, and by views inquiry as a creative process, emerging from the interaction of inquirer and environment.

Passion

It's no secret that researchers are not always cold and dispassionate observers of the world around them. While to the public, academic writings of scholars can appear dry, strictly factual, and dispassionate, reflecting only the context of *justification*, one only has to read the biographies or autobiographies of great scientists and thinkers to see the context of *discovery* (Kaplan, 1964), and see that these are individuals driven by a often overwhelming passion (Barron et al., 1997; Mitroff, 1974). Central to Creative Inquiry is passionate research. This naturally involves encouraging the inquirer to really explore what s/he is passionate about. What does the research really, deeply, care about? It has been my experience that while some graduate students have a clear mission, fueled by passion, the majority is at times unclear about how to address and express the issue of passion. This is to be expected, because the discourse and practices of academia have not, as with creativity, explicitly addressed or valorized passion, despite paying lip-service to terms like originality in research and assuming one cares about one's subject matter.

Academic inquiry has such a long history of banishing emotions, let alone passion, from inquiry that integrating it into the research process takes some un-learning. Consequently, many students have trouble getting in touch with what they are truly passionate about. They may also believe that academia is restrictive in terms of acceptable topics or approaches, or have concerns about how choosing certain topics they may be passionate about might impact their careers. This opens up a wonderful opportunity to excavate the students' assumptions about what is and is not possible in academia, and what the program can and cannot offer. Students may believe that academia simply does not accept their research interest as valid, or that they will be unable to get work if they pursue their passion. Clearly it is not the faculty's job to *force* students to pursue their passion and economic concerns be damned, and it may indeed be the case that the student's research interest is inappropriate in its present frame. But here the faculty advisor can dialogue with the student about how best to participate in the academic community and pursue his or her passion. The advisor/instructor can, for instance, challenge the students' assumptions about what is and is not possible in academic research, how rigor and imagination, and tradition and innovation can be navigated, show

how to introduce new and unusual ideas in the community, or address the challenge of exploring a variety of scenarios for career paths.

In the language of social science, "passion" is sometimes translated as " intrinsic motivation," which means motivation that comes from within because one has a passion for the subject. It is contrasted with extrinsic motivation, when one is motivated to do something simply because of monetary or other external rewards. And yet intrinsic motivation is key to creativity (Amabile, 1996; Barron, 1995; Dacey & Lennon, 1998). Individuals who are intrinsically motivated *care* about their research, and are motivated to make a real contribution.

The focus on passion integrates the inquirer into the inquiry because it grounds the inquirer's work in his or her experience. All too often academic inquiry can lead us into a world that is divorced from our experience, and dictated by a departmental or disciplinary agenda that is increasingly further removed from the experiences that led us to develop a passion for our topic. In this program, students are constantly invited to cycle back to their own personal experience. They engage in a constant dialogue between their personal experience, the existing knowledge-base, and their research. The students' personal experience then also becomes a subject for inquiry, in a larger effort to recognize and valorize the embodied, embedded nature of knowledge and inquiry.

The program's goal is to create an environment where students know they can address and explore their passion as it emerges from their lived experience. They are encouraged to explore their own passion for their topic, its roots, motivations, implications and applications, so that it can potentially be honed into a research project. This dimension of the Creative Inquiry frame can open students up to a world of possibilities. It also has implications for the next two elements, namely Self-Inquiry and Leading Edge research.

Self-Inquiry

The centrality of Passion in the program offers an opportunity to integrate the inquirer into the inquiry. Immediately questions arise. Why is the student interested in this particular topic? What lies behind the passion, and how can it be traced to the students' personal history and his or her context? In the process, students are invited to engage in a self-examination of their motives and beliefs, and also in a personal application of and reflection on the sociology of knowledge as it applies to their own interests. Given that we are dealing with passion, to what extent is this passion both a driver to achieve greater heights and also potentially a source of blind spots and biases? How can we make the students' own process more transparent and explicit, rather than attempting to bracket it in a quest for objectivity? Following Morin, this approach proposes an alternative to "objectivity" through the constant self-observation of the inquirer, a process that can also be a road to increasing self-knowledge and self-awareness (Morin, 1986, 1990). Students are invited to keep journals, and reflect on the whole of their experience—their inspirations, concerns, anxieties, hopes, and aspirations. All inquiry also becomes, by its very nature, self-inquiry. The students constructs or creates a research question, and Creative Inquiry considers exploration of that process of creation an essential part of the research process. Understanding how we have created our research topic also makes us

aware of the distinctions we have made, how we have defined our topic, the choices we have made, what we have left in and left out of the process, and so on. An awareness of this process also opens up the possibility for alternatives and a second order of creativity—not only within the question we have created, but in the very way we have framed the question, in the recognition of possible alternative frames, the assumptions underlying those frames, and the vary nature of frames themselves.

Leading Edge

The program is also designed for students who want to explore the leading edge of their field. While it is not uncommon to see passion in students who want to engage in what we might loosely call "normal science," the exploration of anomalies in the paradigm, or at least the anomalies or aporias in the way a specific question has been addressed, of new and uncharted territory or the integration of disparate perspective, is typically a source of even greater passion. Again, explicitly stating to students that they are encouraged to explore the leading edge in a disciplined way, in such a way that they can continue to participate in the discourse while challenging its assumptions, also opens up possibilities and motivates students to be more creative. Preparing students to engage in leading edge research—if that is indeed their interest—requires a specific kind of preparation and an exploration of how change occurs in social science, how new ideas may be introduced, and how they can become part of a community of inquiry and yet perhaps challenge some of the foundations of that community.

Community Participation

Learning occurs in community. Even a sole researcher is always working within the context of a question, a discipline, methodologies, and assumptions that are the result of a long history of thought by a community of scholars (Montuori & Purser, 1995; Montuori & Purser, 1999). The program encourages participation in a community of fellow students and classmates. It also stresses immersion into the public discourse through small publications such as book reviews in refereed journals. In that sense, the students are making their first steps towards identifying and participating in their scholarly community. Students are warned not to write simply for the instructor. They are asked to consider a wider audience, the new community of inquirers they wish to join and communicate with. Writing for their community, for the people and journals that are dedicated to the study of one's chosen research topic, creates a different frame for the students. It moves them away from seeing themselves as "students," which tends to make them less resourceful, and invites them to consider themselves as fledgling independent scholars who are actively participating in a community, and whose work may well be read by the very same people they themselves are reading.

Dimensions of Creative Inquiry: Tolerance of Ambiguity

Ceruti (Ceruti, 2008) writes that

> uncertainty and ambiguity are not always indicative of a state of ignorance, far removed from a state of "complete" knowledge and control, as well as from a state of divine (or demonic) omniscience. On the contrary, they can be indicative of the fact that the "real" and the "possible" are not immutable domains, but rather processes in a constant state of becoming. Form the very heart of the physical sciences emerges the possibility of an open future, where real innovations and creations can occur, and which is not completely determined by the present and the past. (p. 9)

The shift in worldview Ceruti outlines underlies the philosophy of this program. Educationally it can be explored in a number of ways, including the use of different metaphors to frame the educational process and lead to an understanding of the nature of uncertainty and ambiguity from the personal to the cosmic level, an understanding that is reflected in different ways of making meaning and acting in the world (Montuori, 2003, 2008b).

The attitude of Creative Inquiry is hard to encapsulate in an easy formula. But one key dimension that sheds considerable light on it is Tolerance for Ambiguity. In over 50 years of systematic research on creativity, Tolerance of Ambiguity has consistently emerged as a key characteristic of creative persons (Barron, 1988; Dacey & Lennon, 1998). An ambiguous situation is one for which there are no pre-existing rules and regulations. There is "no framework to help direct your decisions and actions" (Dacey & Lennon, 1998).

Students who have tolerance for ambiguity do well in situations where there is no pre-established way of doing things, where it is necessary to experiment and try new things out. Tolerance for Ambiguity is clearly necessary for the development of creative independent researchers. Creative independent researchers understand that in situations with no pre-established framework and roadmap, they can draw on their scholarship and their capacity for Creative Inquiry. Tolerance for ambiguity involves wanting to create one's own rules and roadmaps where necessary, not the immediate application of pre-existing ones. It is connected to creativity because in situations where there is no clear framework, it involves the choice of *creating* an order rather than reproducing an existing one. Creative persons often appreciate unstructured situations and actively seek them out precisely because it allows them to make up new rules. They are excited by the prospect of improvising, of getting to experiment and figuring things out by trial and error.

Discussing the complexity of creativity, Barron (Barron, 1995) writes that

> The creative intellect, in this view, is that which is ready to abandon classifications known from the past and to acknowledge in its strongest form the proposition that life, including one's individual life, is pregnant with unheard of possibilities and may be the vehicle for transformations without precedent. When such a possibility is accepted, the coercive power of all known systems of classification and the predictive value of regularities based on a history of repetitions are set aside in favor of an openness to the forces of life that are pressing for novel expression both in one's individual existence and through it as a vehicle for the creation of an unforeseeable future. (p. 63)

He goes on to say that

> Thus, in the individuals whom in retrospect we identify as the bearers of the creative impulse in our generation there appears a positive preference for what we are accustomed to call disorder, but which to them is simply the possibility of a future order whose principle of organization cannot now be told. (p.63)

Not everybody feels as comfortable with ambiguity. For some students, ambiguity can be a source of great anxiety. Learning situations with few or no explicit guidelines and no

clear right/wrong answers can therefore be extremely stressful for those who are intolerant of ambiguity (DeRoma et al., 2003). Students with a history of educational experiences with unambiguous instructions and objectives where paramount importance was placed on producing the correct answer, may (out of habit or disposition or both) immediately attempt to impose a pre-existing framework or set of rules on the situation, and they typically expect the instructor to provide them with this framework. They find it hard to remain open to the situation long enough to enjoy exploration into the unknown, without explicit guidelines, and the creation a situation-specific way of addressing the issue at hand. When stressed in this way their thinking tends to become very black and white, either/or. This black and white thinking can sometimes be deceptively appealing to them. In times of stress, an immediate answer that offers a solution to a problem is often welcomed. People who are intolerant of ambiguity often go along with the first solution offered to them, particularly if it is presented with authority, because it alleviates the anxiety of having to deal with yet another problem, and also saves us from more hard work (Sampson, 1999). But the first solution may not be the best one, and this kind of thinking is conformist at best, and at worst leaves one open to being manipulated (Montuori, 2005b). Black and white thinking, coupled with premature closure (deciding on something before other alternatives have been explored, largely for the purpose of alleviating anxiety) is clearly not what we are looking for in independent scholars capable of making creative contributions to their field.

The development of Creative Inquirers almost inevitably involves classrooms where students are given a lot of discretion. They are encouraged to become self-directed, and explore a plurality of perspectives on a particular issue, rather than finding the right answer can be very disturbing for some students. The apparent lack of structure and "right" answers can lead to criticisms of the instructor, who may be viewed as ineffective, unprepared, or disorganized because she or he has not laid out the path to the correct answer, and provided the students with all the structure they need to get there. Self-directed learning can appear very unfamiliar and threatening, particularly for individuals who have been brought up in more authoritarian, reproductive educational environments.

Of course it is the ability to do one's work without the structure provided by the instructor, and the knowledge that there is a correct answer that the instructor already knows that is essential to the preparation of independent scholars. Creative work by definition involves not knowing what will happen—the answer cannot be established ahead. Certain parameters apply, such as the demonstration of solid scholarship, including a thorough understanding of the literature, the ability to do research, logical and creative thinking, and so on, but the students have to be open to the possibility of not knowing what the eventual outcome of their work will be—in other words, that even the instructor does not know what the answer looks like.

Guiding the students through that initial discomfort and anxiety can, in our experience, can often be quite intense process. It is essential to make the transition from, in Lovitts terms, good course-takers to independent scholars, or from Reproductive students to Creative Inquirers. Creative Inquiry involves the active cultivation of Tolerance for Ambiguity as part of the educational process in order to address situations where there is

no set way of doing things, no pre-existing explanatory framework, where it is necessary to experiment and try new things out, or to challenge the assumptions of existing perspectives. This ties back to Creative Inquiry as a process of *self-creation* where students come to address their own ways of knowing and being in the world, and the educational experience becomes grist for the mill of personal transformation. Students who struggle with ambiguity are gradually shown how to become comfortable with increasing levels of ambiguity. They are invited to journal about their experience, explore how to navigate the tension of order and disorder, rigor and imagination, knowing and not-knowing, as well as explore specific ways in which they can become more open to the possibility of a world where uncertainty, ambiguity, hazard, and the unforeseen are potential sources of growth, learning, and change. The playful use of paradox, absurdity, humor, as well as the use of music and images, can contribute to an extremely powerful and transformative experience. At times dramatically challenging the students' expectations about what education, learning, and research are about can help them to see that there are many different ways of framing inquiry, and that Creative Inquiry requires an attitude that values both rigor and imagination, order and disorder, learning and unlearning, knowing and not-knowing (Keeney, 1983).

SUMMARY

In these brief pages I have summarized a complex degree created in an effort to provide a space for passionate, creative, transdisciplinary research that is influenced by the work of such thinkers as Morin, Barron, Nicolescu, Wilshire, Keeney, Bocchi & Ceruti, and Von Foerster. At present the program admits approximately 40 doctoral students a year, and the demand increases every year. The growing faculty originates in a variety of disciplines but shares the commitment to Transformative Studies, to research that potentially changes the researcher and her or his world, while facing the generative challenge of reconciling or navigating rigor and imagination, subjective and objective, learning and unlearning. Built-in to the program is an ongoing assessment process to monitor the students and faculty needs conducted, as is the rest of the program, largely online.

The call for new forms of education by thinkers of complexity must be followed by attempts to draw on these ideas and explore what they might look like in practice, in the context of academic programs. The challenge is considerable, but so is the passion and commitment ignited by the attempt to create alternative forms of education for the 21st century.

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