



# ASSOCIATION FOR INTEGRATIVE STUDIES NEWSLETTER

Volume 27, Number 2 (May 2005)

ISSN 1081-647X

William H. Newell, Editor

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The *AIS Newsletter* is published quarterly by the Association for Integrative Studies, School of Interdisciplinary Studies, Miami University, Oxford, Ohio 45056.  
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## ***Becoming Interdisciplinary*** *Pioneer text on IDS has political significance*

Tanya Augsborg, *Becoming Interdisciplinary: An Introduction to Interdisciplinary Studies*. Dubuque, Iowa: Kendall/Hunt, 2005. 163 pp. Paper (ISBN 0-7575-1561-4) \$41.95.

Reviewed by Richard Castellana, Professor of Humanities and Fine Arts Director, Bachelor of Arts in Interdisciplinary Studies, Fairleigh Dickson University.

On hearing that an IDS text had been written, I had mixed feelings. I was excited, yet worried. I've never liked textbooks. Furthermore, the publication of a first text in a field has political significance, marking a coming of age (good) and demarking a territory with its attendant inclusions and exclusions (iffy). Texts are necessarily selective and, especially in the social sciences and humanities, seem to leave out what one thinks should be included and make what is still controversial seem definitive. This is an especially sensitive issue for first texts as students will perceive them as defining the field.

Any qualms I had about the value of an IDS text were dispelled when I saw the reaction of my students: they scrambled to get hold of it. I could see that simply having a text on IDS gave them a sense of reassurance and a promise of enlightenment. Happily, *Becoming Interdisciplinary...* is just about perfect in this regard. From the very first sentence, Augsborg lets us know that this will be a student-friendly text, useful for students seeking a better understanding both of interdisciplinary studies and *of themselves*" [my emphasis]. "Students are asked to reflect on their lives, their reasons for majoring in interdisciplinary studies, and their intellectual interests so that they can make better decisions regarding themselves, their education, and ultimate career goals" (p. vii). The text is designed to help IDS majors learn fundamental interdisciplinary concepts, theories and research methods; and it is brought to life by stories, readings, debates, examples and projects. Augsborg is particularly sensitive to the special need of interdisciplinary majors to have a text that *helps them explain their prospective degree to others*. She follows through on the promise.

Following a very brief history of the university from its original concern for a unity of knowledge, to the fragmentation caused by the emergence of disciplines, and to the desire for integration that led to the creation of interdisciplinary studies programs in the  
*(continued on page 2)*

### ***Past presidents appreciated***

Over its more than 25-year history, AIS has had remarkable leadership in its past presidents. Because of the talents and time AIS presidents devoted to the organization, AIS has grown from a small group of idealistic founders in the 1970s to a professional organization whose members contribute to the national and international conversations on interdisciplinary teaching, scholarship, and research. Most recently, past AIS presidents contributed significant financial support to our organization. Their continuing generosity sustained the organization during a period of depressed resources and guaranteed that AIS will continue as a professional home and resource to those of us who are interested in crossing boundaries, working at the margins, and exploring issues too complex for a single disciplinary analysis or perspective.

Please consider joining AIS past presidents in their financial support of our professional organization. Your tax-deductible gifts will help ensure that future AIS projects, conferences, resources, and publications will continue to be developed and shared. Donations payable to the Association for Integrative Studies may be mailed c/o School of Interdisciplinary Studies, Miami University, Oxford, Ohio, 45056.

### ***Becoming Interdisciplinary . . .***

twentieth century, key terms are defined: interdisciplinary studies, discipline, multidisciplinary, transdisciplinarity and crossdisciplinarity, among others. All definitions are quoted *verbatim* from the scholarly writings of Julie Thompson Klein and William H. Newell, whom Augsburg rightly credits for their contribution to the field.<sup>1</sup> Yet I find the quotations excessive and exceptions to her otherwise student-friendly style. For example: “Indeed, the interdisciplinary motivation to seek a more comprehensive perspective would have had little urgency prior to the development of the distinctive worldviews of reductionist disciplines” (p. 4). This quotation from Newell is fine for a scholarly work, but students would find the term “reductionist” obscure and Augsburg makes no attempt to define it.

Augsburg does an excellent job explaining the distinction between interdisciplinarity and multidisciplinary. She contrasts a hypothetical example of a multidisciplinary panel of AIDS workers, who fail to integrate their perspectives, with a real world example of how Thomas H. Murray successfully integrated ethics with psychology. Murray was a graduate student engaged in the infamous Milgram experiments, in which test subjects were tricked into believing that they had delivered shocks to volunteers, when he became aware of the detrimental effect the experiments had on the subjects – effects to which his colleagues were oblivious. Murray’s “Confessions of an Unconscious Interdisciplinarian” is wisely included in the supplementary readings.

Keeping her promise to integrate the personal, educational and professional, the following chapters focus on the characteristics of interdisciplinarians and on how to write a personal narrative. “The message you want to tell is that you have had a life that lends itself to being interdisciplinary” (p. 29). Five readings about or by interdisciplinarians follow, starting with obituaries of Isaiah Berlin and Fred Rogers (Mr. Rogers of children’s television fame) who both started out not knowing what they wanted to do, but nevertheless achieved success. In “Construing Continuity,” Mary Catherine Bateson, who lived in

Israel as an exchange student and visited again years later when both she and Israel had changed, asks us to follow her example and tell our stories of “shifting identities and interrupted paths” (p. 44). These stories will particularly resonate with adult students who have had their educational and career paths interrupted, but their message will not be lost on students fresh out of high school. The other readings are by Murray, mentioned above, and “The Celtic Question” by Richard W. Jackson, one of Augsburg’s students. Jackson writes that since the seventh grade he wondered why the Celts never won a battle. After a series of “shifting identities and interrupted paths” he finally found a route to answering his question via an integration of anthropology and history.

Chapter six, “Advantages and Disadvantages of Interdisciplinary Studies,” does double duty by equipping students with a defense of their major and making clear that IDS is about solving complex problems. Augsburg takes the position that “There is no Defense like a Good Offense” (p. 59), which takes the form of readings and commentary on Thomas C. Benson’s “Five Arguments Against Interdisciplinary Studies” and Newell’s rebuttal. These articles were published in the first two *Issues in Integrative Studies* and set the agenda for the future of IDS, its categories, scope and research methods. Benson, acting as devil’s advocate, complains that IDS has no unambiguous definition. Newell responds with determination: the “problem-solving conception of interdisciplinary studies is the most fruitful” (p. 65). Augsburg is even more emphatic: “There is no conceptual confusion: Interdisciplinary Studies are about complex problem solving” (p. 75). I have more to say about this definition of IDS below.

The final chapter, “Understanding and Doing IDS” expands on the reading, “Do You See What I See? *The Epistemology of Interdisciplinary Inquiry*” by Hugh Petrie. Petrie uses perceptual illusions (e.g., duck/rabbit) as metaphors for how disciplines with different perspectives or cognitive maps can look at the same object yet see something different. Since solving complex problems requires the integration

of disciplinary insights, one must first understand the categories and cognitive maps of the relevant disciplines. In “plain English,” Augsburg explains that a cognitive map defines a discipline by providing its basic concepts, modes of inquiry, problems addressed, standards of proof, types of explanations, etc. (p. 96). In all she comments on fifteen elements that characterize a discipline. A helpful worksheet to guide student research concludes the chapter.

Part three consists of supplementary readings organized into three clusters. “Methods of Integration,” “Trends in the Twenty-First Century Interdisciplinary Workplace” and “Types of Intelligence.” “Teaching for Transfer,” by D.N. Perkins and Gavriel Salomon, stresses the importance of transferring skills learned in one area of knowledge to another. The second cluster contains readings that acquaint students with changes in the job market that favor the skills developed through an interdisciplinary education. The last set includes readings based on Goleman’s concept of emotional intelligence and Gardner’s multiple intelligences. The readings are valuable, but appeared to be tacked on at the last minute. The original sources of the readings were not cited, and there were no introductions.

Although it has been published, Augsburg considers *Becoming Interdisciplinary* a preliminary text, and a second edition is due in 2006. The text is brief, only 163 pages, and more than half consists of readings. Thus much that could or should have been included has been left out. The book was surely written with Augsburg’s students at Arizona State University in mind, which might explain the omissions. At ASU students apply to the program when they have completed three semesters and have chosen two disciplinary concentrations. The IDS component consists of a sequence of four courses focused on the methods of disciplinary and interdisciplinary research. The text under review is ideally suited to students taking an introductory course in this sequence.<sup>2</sup> It is less suited to programs like ours at FDU that requires forty-six credits of IDS coursework and aims to give an education in the liberal arts as part of the interdisciplinary coursework.

As mentioned above, the publication of a text has political significance because it will help define a consensus on the meaning and purpose of interdisciplinary studies. This is a good thing, but it draws boundaries that include and exclude. My concern is not so much the drawing of boundaries per se, but with where the boundaries are drawn. In this regard, I do have a few objections to where Augsborg draws them. Some are minor; others are more serious.

As Augsborg is sensitive to the needs of her students, the text tends to become somewhat “ASU-centric” in places. For instance, among the reasons she lists for why students at ASU major in IDS are: “I had to leave my previous degree program because I did not have a high enough G.P.A.” and “students failed to be accepted to the degree program of [their] choice (typically, the business school)” (p. xi). At Fairleigh Dickinson University where I teach, the IDS program has higher admissions standards than the business school and students transfer to other programs because they find IDS too demanding. When explaining why “patience” is a personal characteristic that interdisciplinarians must develop, Augsborg gives the example of ASU students who might have to wait one or two semesters to enroll in an IDS course because there are too many students and too few instructors. Meanwhile, at FDU we are struggling hard to find qualified students. Although only a minor irritation, this frequent reference to ASU can be ... well, irritating. The boundary of IDS is drawn too close to home.

There are also a couple of inconsistencies or oversights, when narrow definitions conflict with more inclusive examples. The integrative method is defined solely in terms of obtaining and integrating *disciplinary* perspectives (or insights) to the exclusion of *non-disciplinary* perspectives. This is probably an oversight on Augsborg’s part as she clearly recognizes the value of non-disciplinary perspectives when she discusses what an interdisciplinary study of the Holocaust would entail. The only disciplines mentioned are history and psychology. Non-disciplinary perspectives dominate the list: cultural (“German

culture”), religious (“Judaism”), ideological (“anti-Semitism”), political (“politics and mass media”), personal (“personal narratives”), artistic (“art produced by inmates” and “Holocaust literature”).

The Holocaust example illustrates another inconsistency or oversight. Augsborg invariably defines the goal of interdisciplinary studies narrowly as *problem solving*, yet in the example above the goal is *understanding*. Certainly one cannot solve problems without first understanding them. Yet the purpose of a liberal education is also to understand oneself and how to live, which surely are problems, but not the sort that Augsborg appears to have in mind. The aim of interdisciplinary studies, at least at the undergraduate level, is not invariably to *solve* a complex problem; it is often simply to get a better *understanding* of it. Unfortunately, Augsborg relies on Newell’s earliest attempt at stating its goals. In his latest formulations, problem solving has been losing ground to understanding: from “*solving specific problems*” in 1982; to “*construction of a more comprehensive perspective*,” in 2001; to “*construction of a more comprehensive understanding*” in 2005 [emphasis is mine].<sup>3</sup> This last formulation was not available to Augsborg when writing her text so she cannot be faulted for omitting it.

Unless I have misread her, Augsborg’s identification of IDS with problem solving is problematic in other ways. One, it seems to reduce IDS to interdisciplinary research (IDR); two, without further explication of the difficulties associated with arriving at integrative solutions, the student might be led to believe that complex problems invariably have unique solutions; and three, in my opinion, she errs in dissociating IDS from the liberal arts.

The first, the conflation of IDS with IDR, is not surprising considering: 1) the fact that the focus of the ASU program *is* on training for IDR, and 2) that the terms are used interchangeably in the literature and in the academy. I would have less of a problem with the text if it were subtitled “An Introduction to Interdisciplinary Research” or if the definition of IDS were broadened to include the liberal arts. In this

case my criticism is less of Augsborg than of the generally sloppy use of the terms.

Second, as the problem-solving approach is described by Augsborg, the student might get the impression that all complex problems have unique solutions. Although the interdisciplinarian attempts to understand, reconcile and integrate various perspectives, irreconcilable differences in values, interests and ideologies will remain when solutions have social, political or cultural consequences. Clearly inferior solutions may be eliminated, but *the* solution requires a judgment of value, a judgment of what constitutes the common good, by a decision-maker. Newell addresses the problem of the relation of the interdisciplinary researcher to the world of the political and corporate decision-maker in his forthcoming chapter on the interdisciplinary decision-making process. He makes clear that the interdisciplinarian, *qua* interdisciplinarian, does not necessarily provide *a* solution to the problem; the decision-maker, politician or corporate executive, does. It would be good if in future editions Augsborg addresses this aspect of interdisciplinary research.

This brings me to my third problem, Augsborg’s dissociation of IDS from the liberal arts. As I understand it the purpose of an interdisciplinary education is not solely to *train* problem-solvers, it is also to *educate* students to become clear and critical thinkers, to become public-minded decision-makers, and to become responsible citizens who are capable of holding the decision-makers in check. It is an education in the values and ideals of a liberal, civil society. According to Augsborg however:

The difference between a degree in interdisciplinary studies and a traditional liberal arts degree is in purpose. When studying the liberal arts, education is an end to itself – there is no higher purpose. Interdisciplinary studies has a practical dimension – one chooses interdisciplinary studies because one wants to solve complex problems. (p. 26)

(continued on page 4)

## Duke U. revises tenure rules to support interdisciplinary studies

Duke University has changed its rules for faculty appointments, promotion and tenure processes to support interdisciplinary studies.

A recent revision of Duke's Faculty Handbook provides that prior to requesting approval of a departmental review committee, the candidate will be asked for "a brief written synopsis of his or her intellectual interest, including a description of any factors – *interdisciplinary or otherwise* – that the candidate believes should be taken into consideration in establishing said review committee" (emphasis added).

The handbook further states:

When candidates hold secondary/joint appointments and/or participate in interdisciplinary

activities beyond the primary department, it is expected that such other academic units will be asked to provide a statement for the dossier about the level and quality of the candidate's contribution there. Furthermore, the dean shall be actively involved in determining the membership of the faculty review committee so as to assure an informed evaluation of the candidate's disciplinary or interdisciplinary contributions.

Duke University's Faculty Handbook can be accessed in a PDF format at <http://www.provost.duke.edu/fhb.htm>. The relevant language can be found in Chapter 3 beginning at the bottom of the second page.

Cathy Davidson, Vice Provost for Interdisciplinary Studies at Duke University, said the new language in Duke's Faculty Handbook was brokered across the university's eight schools and had to be "deliberately general" to apply to all cases.

"We were pretty tireless at getting this through all the relevant committees, entertaining all possible objections and alternate wordings, understanding the rules of every department and school so we could come up with wording general enough to be relevant to each," Davidson said.

"We are very excited by the result as we absolutely know it has made a difference in every way, from recruitment and retention to faculty satisfaction," she said.

### Becoming Interdisciplinary . . .

Surely, Augsburg must realize that reducing the liberal arts to education for its own sake is leaving a lot out. There are many interdisciplinary studies programs that do not divorce liberal arts from interdisciplinary studies. According to Julie Klein Thompson "[t]here is no sharp dividing line between liberal education and interdisciplinary concentrations because the interdisciplinary approach is often a way of making training more 'liberal' in both scope and substance."<sup>4</sup> In my opinion, interdisciplinary studies are the best approach to a liberal arts education, but I will not argue that here. Suffice it to say that many interdisciplinary studies programs make it a policy to provide a liberal arts education – and a textbook on IDS should make note of it.

As mentioned earlier, a first text in a field marks a coming of age and carries political significance. Textbooks help to define a discipline or field, bestow authority and create consensus by educating (indoctrinating?) generations of students. We all know that a consensus is not created by tallying votes on a one-person, one-vote basis; it is created piecemeal and, partially, through the authority of textbooks. So, we must ask,

has a consensus already been created on the definition and meaning of IDS and is it the one that Augsburg implicitly defines? Newell acknowledges that there "has always been a vocal faction of members [of the interdisciplinary community] who caution against definitional closure . . . on the grounds that settling on any definition excludes as well as includes; they prefer to let a thousand flowers bloom."<sup>5</sup> Whenever boundaries are drawn, some will inevitably feel or be excluded. Although sensitive to such objections, Newell, in the name of developing clear standards for interdisciplinary studies, is willing to alienate, if not exclude, at least a portion of those who want no boundaries. I agree with Newell here, so the question for me becomes, "where is the boundary to be drawn?"

I would draw it wider than Augsburg and perhaps Newell. Most of my qualms about the text would be dissipated if: 1) the subtitle referred to interdisciplinary *research* (or, equivalently, *integrative studies*) rather than interdisciplinary *studies*, or 2) more credit was given to alternative definitions of IDS; and 3) a

clearer line were drawn between interdisciplinary research (the major topic of *Becoming Interdisciplinary*) and interdisciplinary studies, which I would define as *an approach to education that includes both the liberal arts and interdisciplinary research*.

Despite my little irritations, I have ordered copies of *Becoming Interdisciplinary* for my students: it is an excellent, introduction to interdisciplinary research for undergraduates, and it is sensitive to their needs.

### Notes

<sup>1</sup>William H. Newell, ed., *Interdisciplinarity: Essays from the Literature* (New York: College Entrance Examination Board, 1998); and Julie Thompson Klein, *Interdisciplinarity: History, Theory, and Practice* (Detroit: Wayne State University Press, 1990).

<sup>2</sup><http://www.asu.edu/duas/bis/aboutBIS.htm>.

<sup>3</sup>*Issues in Integrative Studies*, 1982, 2001; "Decision-making in Interdisciplinary Studies," in Göktug Morçöl (ed.), *Handbook of Decision Making* (New York: Marcel Dekker, forthcoming 2005).

<sup>4</sup>*Interdisciplinarity: History, Theory, and Practice*, p. 172.

<sup>5</sup>"A Theory of Interdisciplinary Studies," p. 6, *Issues in Integrative Studies*, 2001.

# Interdisciplinarity and complexity revisited

By Raymond C. Miller, Professor of International Relations and Social Science, San Francisco State University

This essay comments on an article by Professor Julie Thompson Klein, "Interdisciplinarity and Complexity: An Evolving Relationship" (*E:CO* Fall, 2004, pp. 2-10) and a chapter by Professor Bill Newell, "Decision-making in Interdisciplinary Studies," forthcoming in *Handbook of Decision Making*, edited by Göktug Morçöl, 2005. Since both articles refer back to that excellent, special 2001 edition of *Issues in Integrative Studies* which was largely devoted to Professor Newell's article, "A Theory of Interdisciplinary Studies," and responses to it, some of that dialogue will also be incorporated. The respondents included Professor Klein as well as Professors Stanley Bailis, Richard Carp, J. Linn Mackey and Jack Meek. I am pleased to have the opportunity to comment on this pair of articles by Klein and Newell, the two most recent recipients of the prestigious AIS Boulding award named for the late Kenneth E. Boulding who was a pioneer in both interdisciplinary studies and complex systems theory.

In 1997 Professors Klein and Newell collaborated on a book chapter in which they proposed a consensus definition of interdisciplinary study. Both of the essays under review reiterate that definition. It is "a process of answering a question, solving a problem, or addressing a topic that is too broad or complex to be dealt with adequately by a single discipline or profession" (Gaff and Ratcliff, p. 393).

The salient distinguishing concept for whether or not something necessitates interdisciplinary analysis, for both Klein and Newell, seems to be the quality of being "complex." One of the ways in which they both support this view is by quoting from various other scholars who claim that because this or that set of issues is complex, it requires interdisciplinary analysis. Interdisciplinary analysis is juxtaposed against disciplinary analysis, which presumably does not adequately address complex issues. Disciplines are supposedly limited to the analysis of simple matters because of the reductionist,

linear, narrowly focused qualities of their approaches. Despite the central position of this claimed distinction in both of their arguments, neither Klein nor Newell provides comprehensive empirical support for it. It is presented as a self-evident assertion of theirs and other authors whom they quote. It seems highly unlikely, however, that disciplinary denizens would accept this characterization as accurate.

For example, both Klein and Newell use ecological issues as instances of complex problems that require multiple disciplines to be adequately analyzed. When I read their contentions that dealing with acid rain or restoring the Florida Everglades are inherently interdisciplinary issues, I thought of all the geographers who are incorporating in their geographical analyses of these and comparable issues all the dimensions that Klein and Newell mentioned. So what does that make geography and geographers? Is geography a discipline or an interdiscipline? Are these geographers just doing what comes naturally to geographers, or are they going beyond their disciplinary territory into the interdisciplinary realm?

Could we raise similar questions about other disciplinary fields? I think so. Do disciplinary scholars tackle complex issues, that is, issues which have complicated relationships and whose outcomes are difficult to predict? Probably. Therefore, I tentatively conclude that identifying something as complex does not necessarily determine, in and of itself, whether it requires an interdisciplinary analysis. It may be a necessary trait before it qualifies for interdisciplinary treatment, but it definitely is not sufficient.

'Complex' easily fuses into 'complexity' in both Klein and Newell's narrative, not only in the sense that 'complex' is the adjective and 'complexity' is the noun, but also in the sense that 'complex' describes the nature of some actual set of relationships, whereas 'complexity' refers to some theoretical way of understanding real

phenomena. Thus 'complex' is often used to describe the nature of things out there (ontology), whereas 'complexity' tends to refer to a deliberately constructed intellectual means of trying to understand what's going on out there (epistemology). Both Klein and Newell perceive highly important relationships between complex phenomena and complexity on the one hand and interdisciplinary issues and interdisciplinarity on the other hand.

Klein and Newell use different approaches to the discussion of complexity. Klein's approach is more discursive. She asserts, for instance, that there are changes in the rhetoric. Knowledge is increasingly being described as a network rather than a linear structure, alliances rather than isolated nodes, dialogue rather than control, fractals rather than a map. The new knowledge of complexity sees "reality" as "messy," a "jungle of phenomena," "turbulent and uncertain," a "swamp," and even "wicked." Exactly how prevalent this new rhetoric is and what its implications are is rather "fuzzy," at least to this reader. I suspect that Newell would go even further and consider these metaphors as unhelpful in the important task of developing a credible methodology of interdisciplinarity.

Newell is more interested in investigating the theories of complexity and their applicability to the interdisciplinary process as he envisages it. He considered complexity theories deriving from chaos theory, complex systems, fractal geometry, nonlinear dynamics, second-order cybernetics, self-organizing criticality, neo-evolutionary biology, and quantum mechanics (2001, p. 6). In his 2001 "A Theory of Interdisciplinary Studies" Newell selects a version of complex systems theory as the theory for interdisciplinarity. He argued that his preferred theory both described most accurately the real complex phenomena that require interdisciplinary study (ontology) as well as provided the best theoretical structure (epistemology) for integrating the partial insights of the relevant disciplines.

(continued on page 6)

### **Interdisciplinarity and complexity . . .**

While appreciating Newell's willingness to propose a theoretical grand tent for interdisciplinary studies based on his complexity theory, none of his respondents wanted to be inside. That included Klein. "The attempt to construct a universal theory of interdisciplinary studies is a modernist agenda which is at bottom reductive" (2004, p. 8). Bailis argues, "To try to focus attention on the absolute nature of reality pursued in the one and only way that reality itself requires, is to claim an *a priori* knowledge of the real that no one, not even my pal Newell, has or can have" (2001, p. 41). Mackey argues that Newell's chosen theory is flawed because it uses nonlinearity as a "mysterious *deus ex machina*." Mackey contends that using nonlinearity as the crucial determinant of complexity is an empty theoretical concept because further equations are required to determine the form and movement of a system. Newell heard their criticisms, for in his latest essay he states, "Many interdisciplinarians who believe . . . that reality is largely unknowable and cannot be seen indirectly . . . will agree with much of what is said here about interdisciplinary practice and decision-making, even as they reject the complex system rationale" (2005, p. 4). However, Newell still argues that, "the test of complexity is not breadth but the predominance of nonlinear linkages between sub-systems."

In his 2001 article Newell tried to connect the steps in the process of implementing interdisciplinary studies to his theory of complexity. In his 2005 chapter he has reluctantly accepted, as his above quote indicates, his inability to "sell" his approach to most of the other major interdisciplinary scholars. Consequently, his focus in his new chapter is on the method, not the theory, of interdisciplinary analysis. Newell properly credits Klein for providing the first stipulation of the steps in the interdisciplinary process in her seminal and path-breaking 1990 book, *Interdisciplinarity: History, Theory and Practice*. Newell has reworked Klein's dozen steps into two overarching categories: "Drawing on disciplinary perspectives" and "Integrating their insights through construction of a more comprehensive perspective."

Richard Carp was critical of Newell's reliance on existing disciplines for insights, concepts, theories, methods and perspectives. Carp argued that interdisciplinarians should not rely on the conservative vessels of conventional disciplines, as they are the products of the power relations that have produced many of the problems that interdisciplinarians are trying to address. Newell responded that most existing knowledge is discipline-based; therefore, it would be unrealistic to reject disciplines as the prime sources. Besides, while disciplines would be the primary sources, he also would consult interdisciplines and schools of thought. "Indeed, the term 'interdisciplinary' probably places too much emphasis on the disciplines and not enough on the other available sources of perspective. Were it not so infelicitous, one might better speak of 'interspectival studies' instead" (2005, p. 10).

Newell argues, as he has for years, that disciplines (and other organized ways of understanding the world) have distinctive perspectives – definite world views – that inform how they apprehend some slice of reality. These perspectives provide coherence, but they also induce limitations of vision. The more disciplines that are found to be relevant to a particular phenomenon under investigation, then the more its study calls for an interdisciplinary approach. In fact, one could argue, using Newell's own analysis, that instead of complexity as the ultimate distinguishing criterion for determining which phenomena require interdisciplinary analysis, the better criterion might be the perceived necessity to use the insights of multiple disciplines (perspectives). Newell would undoubtedly argue that these two determinants are really the same thing. However, using the latter more prominently at least reduces the distraction of the arguments over complexity, and it emphasizes probably the most important quality of interdisciplinary work, that it values the insights of multiple perspectives.

While Newell has moved to highlighting perspective, Klein has conceptually shifted, along with many Europeans that she cites, to "transdisciplinarity." In her usual style, Klein does not provide one definition of

the term, but instead provides lists from several authors of qualities associated with transdisciplinarity. The earlier use of the concept in the 1970s was more formal, pointing to comprehensive intellectual frameworks that transcended the material fields of several disciplines in a holistic manner. Examples included general systems, Marxism, structuralism, sociobiology, phenomenology, etc. (Miller, 1982, pp. 20-29). The only comparable example of the new transdisciplinary approaches that Klein mentions is sustainability. However, the list of defining attributes for transdisciplinarity is extensive: "solution oriented," "participatory," "process-oriented," "community values," "uncertainty," "postmodern," "valuing indigenous knowledge," "postcolonial," "ethically aware," "emergent," "adisciplinary," "non-reductionist," "multi-level," "discourse sensitive," "hybridization," "dedifferentiation," etc. Carp might very well approve of all of these attributes, but I suspect that Newell would sympathize with the sentiments while also believing that they offer little guidance in organizing effective interdisciplinary research and decision-making. In Newell's new essay I could find only one use of the term transdisciplinary. In an aside buried in the middle of a paragraph he notes that schools of thought are sometimes referred to as transdisciplines (p. 9).

Klein's article does not add much guidance to principles in the practice of interdisciplinarity. That was not the intent of her address to the international congress in Mexico City. However, that is actually what Newell is trying to contribute in both his 2001 and 2005 essays. In my view, when he does not overreach, he does make useful contributions. I have no problem with Newell presenting an "idealized model" (2005, p. 2) of how to go about interdisciplinary research. He overreaches when he claims that his approach should be recognized as the way, and he overreaches when he argues that knowledge models closely reflect the aspect of reality that they have been established to understand. In his latest essay Newell is more modest, but he still seems to believe that the world views, the thought models of disciplines, closely resemble that part of reality that they claim

as their territory. “The insights of different disciplines conflict because they reflect the irreducibly different, conflicting, or even incommensurate principles by which the sub-systems they study operate” (2005, p. 15).

The most interesting part of Newell’s “idealized model” for me was his suggestions in the second part of the interdisciplinary process, “Steps involved in integrating disciplinary insights through construction of a more comprehensive understanding.” The integration part of the interdisciplinary endeavor has always been the murkiest part, yet it ultimately is the most important. Newell argues that in order for insights from several disciplines to be successfully combined there needs to be a “common ground,” a common language. He suggests a series of “*integrative techniques*”: redefinition of concepts, extension of meanings, transformation of dichotomies into continua, and identifying patterns of more inclusive relationships. He helps the reader with relevant illustrations, several drawn from the work of Professor Boulding.

As Mackey points out, most interdisciplinary research will produce modest, incremental results from the application of integrative techniques. But since Newell is proposing an idealized model, he takes it further. His next step is the creation of a new model, a new theory that specifies the linkages among variables that cross over disciplinary boundaries. He argued in 2001 that this new theory would be most robust if it were based on the particular theory of complexity that he was advocating. Developing a new comprehensive model, based on complexity theory, as the culminating step in the interdisciplinary process was an astounding expectation to Mackey. To him Newell seemed to be arguing that all interdisciplinary scholars should aspire to be “heroic, complex-system modelers.” In his response to Mackey Newell did not directly address this concern. In his new

essay Newell has retreated from advocating his preferred complexity theory as the guide to synthesis. Unfortunately, he has replaced it with a rather confusing, and therefore unhelpful, discussion. Personally, I wish he had made an extended argument, with illustrations, as to why his complexity theory is a superior vehicle for integration. In agreement with Mackey, I do not believe that most interdisciplinary research processes are going to result in new, more comprehensive theories. However, there are many existing theories, models, or at least frameworks, that go beyond disciplines; and they are usually called transdisciplines. Instead of calling for the creation of a new model as Newell does in his *culminating step*, I would reformulate that step so that it involved evaluating all the relevant existing transdisciplines, including potentially the several variations of complexity theory, to see if any of them could serve as an effective integrative strategy for the phenomena under study. If pluralism is advantageous at the discipline level, why is it not also advantageous at the transdiscipline level? If it turns out that none of the existing theories are producing adequate results, and if the scholar is an unusually intelligent and creative person, then she or he might venture into the frontier and try constructing a new model.

Finally, in the testing or evaluation of the chosen integrative strategy, the question arises as to why Newell limits the ultimate test to its “real world utility” (2005, p. 24). That may be a useful measure for managerial decision-making, but it is not necessarily appropriate for the myriad of other issues that the interdisciplinary process can effectively and appropriately address.

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## Study seeks participants

The Center of Inquiry in the Liberal Arts at Wabash College is seeking institutions for participation in the National Study of Liberal Arts Education, a large-scale, longitudinal study to investigate critical factors that affect the outcomes of liberal arts education. The center’s research will help colleges and universities improve student learning and enhance the educational impact of their programs. One of the fundamental goals of this research is to create faculty-friendly and institutionally-useful assessment for outcomes such as effective reasoning and problem solving, inclination to inquire and lifelong learning, integration of learning, intercultural effectiveness, leadership, moral character, and well-being. Research universities, regional universities, liberal arts colleges, community colleges, and other higher education institutions are encouraged to apply. There is no fee for institutional participation. Application review begins May 1, but will continue through June. It is not too late to apply. For information about the study and application forms, visit the Center of Inquiry’s website: [www.liberalarts.wabash.edu/nationalstudy](http://www.liberalarts.wabash.edu/nationalstudy). Address comments or questions to Charles F. Blaich, Director of Inquiries, (765) 361-6331, [nationalstudy@wabash.edu](mailto:nationalstudy@wabash.edu).

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# ***Upcoming conferences***

**The Association for Integrative Studies and the Association for General and Liberal Studies** will partner in October 2005 to bring together educators from around the globe to exchange ideas on current challenges, opportunities and best practices in integrated learning. "Integrations: Liberal Learning in a Diverse World" is the theme for the joint national conference, which will be hosted by New Century College, George Mason University, October 6-9, 2005, meeting at the Hyatt Fair Lakes in Fairfax, Virginia. It will be the 27<sup>th</sup> annual AIS conference and the 45<sup>th</sup> annual AGLS conference. Information about the conference can be accessed through the website, <http://www.ncc.gmu.edu/integrations/>.

**The Association for Integrative Studies** will present a teleconference on "Interdisciplinary Studies: Where Are We Today?" from 1 to 3 p.m. EDST Nov. 10, 2005, with a live question-and-answer period. The panel will include: William H. Newell, AIS Executive Director and Professor of Interdisciplinary Studies at Miami University; Julie Thompson Klein, Professor of Humanities in Interdisciplinary Studies at Wayne State University; and Carolyn Haynes, Professor of Interdisciplinary Studies and Director of the Honors and Scholars Program at Miami University. The conference will define interdisciplinary study and will discuss the questions of what are the outcomes of interdisciplinary study, what constitutes an interdisciplinary course, what constitutes an interdisciplinary program, what characterizes interdisciplinary pedagogy, and are there common standards for interdisciplinary efforts. For registration information, contact Don Stowe, Associate Dean, College of HRSM, University of South Carolina, Columbia, SC 29201, (803) 777-3805. The email address is [dstowe@sc.edu](mailto:dstowe@sc.edu) and the website is <http://www.hrsm.sc.edu/ais/>.

**"Integrative Learning: Creating Opportunities to Connect"** is the theme for the Association of American Colleges and Universities' Network for Academic Renewal Conference, scheduled for October 20-22, 2005, in Denver, Colorado. The conference will seek to provide a clear picture of what integrative learning looks like in particular campus settings, how it is defined and relates to the institutional mission of that campus, how it is represented in the curriculum and fosters student achievement, and how it is assessed. The Association for Integrative Studies is one of five academic partners for the conference. Registration information can be accessed through the conference website, [http://www.aacu-edu.org/meetings/integrative\\_learning/index.cfm](http://www.aacu-edu.org/meetings/integrative_learning/index.cfm).



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