Editor's Introduction

At a time when we now have two foundational textbooks in interdisciplinary studies (Augsburg, 2006, and Repko, 2008), this volume of *Issues* marks a significant contribution to our thinking about the philosophical foundations of our growing field. To explore and critically reflect on the ontological and epistemological foundations of interdisciplinary studies is a measure of maturity. In their different ways the first four articles of this volume do just that as does the fifth to a lesser extent.

The first article focuses on ontological differences among interdisciplinarians and the resulting split in interdisciplinary epistemologies. The second article explores the ontological nature of the complex problems that interdisciplinarians address and about their own relation to these problems. The third article tackles epistemological questions raised by interdisciplinarity as these relate to the history of Western philosophical thought. The fourth article assesses the epistemological implications of disciplinary fragmentation for the problem of integration that is seen at the heart of the interdisciplinary process. The fifth article asks whether those who study the practices of interdisciplinarians should themselves take an interdisciplinary approach.

In the lead article, "Knowers and Phenomena," Angus McMurtry from the University of Ottawa entices us to consider two parallel strands of thought within the interdisciplinary and interprofessional literature. One strand sees differences in the world as irreducible and grounded in the assumed reality of the phenomena studied. The task of interdisciplinarians according to this view is, in the words of phenomenological sociologist Alfred Schütz, to make sense of those phenomena through "first order constructs" as scientists do when interpreting the natural world. The other strand sees differences as socially constructed by the "knowers," in this case interdisciplinarians, who make observations, classifications and discursive distinctions that render the world to appear as though it is real. In Schütz's terms interdisciplinary "knowers" are in the business of making "second order constructs," through which they make sense of others' constructions of the world. McMurtry sees little dialogue between these two strands and invites us to integrate them to produce a more comprehensive and robust view of the field. He speculates on what such an integrative approach might look like, challenging interdisciplinarians to transcend the limits of current thinking.

In the second article, "The Problem with Problem Solving," Brian McCormack of Arizona State University raises the philosophical question of why, given that problem solving is one of the central features of

interdisciplinary theory and practice, have few interdisciplinarians addressed the ontological nature of problems and problem solving. He observes that we have "insufficient understanding of the nature of problems." In redressing that deficit McCormack reviews the literature on problems and problem solving in IDS, arguing that most of this work is focused on the interdisciplinary process and particularly on the "interdisciplinary research process." Drawing on Klein's (1996) distinction between critical and instrumental approaches to interdisciplinarity, McCormack argues that this distinction is less clear than it once was. Rather than re-presenting models of the interdisciplinary process, which have been discussed at great length especially in previous volumes of *Issues,* McCormack is interested in how we might think about problems, how to solve them, and how we might scrutinize the status of the problem solver. He moves "from fairly simple notions of objectivity to the more difficult ideas of the problem of thought itself." He considers the objective, subjective, and constructed nature of problems, Foucault's critique of problematization, Certeau's notion of everyday practices, and Deleuze's event-based approach to problems. For example, he highlights the central point of Foucault on the subject position of problem solvers, advancing the notion that we can become critical observers of the processes of problematization, rather than its producers and, therefore, part of the problem. He invokes Deleuze to explain the philosophical idea of a problem—the "problem of thought," using examples of complex problems such as Hurricane Katrina, terrorism and colonialism to illustrate his argument. In summary, McCormack offers a roadmap to several ways of understanding problems and problem solving. He also raises fundamental questions about the position of the problem solver, suggesting that "interdisciplinarians should take notice of the possibilities of these and other ideas about problems and problem solving" which "can only enhance the interdisciplinary process, however it is conceived."

In his philosophically grounded analysis, "Interdisciplinarity and the History of Western Epistemology," the third article in this volume, James Welch IV of the University of Texas at Arlington argues that because interdisciplinarity has a unique approach to knowledge domains, it is unavoidably involved in epistemology. Emerging at a historical period when complex problems are seen to cut across the boundaries of knowledge, interdisciplinarity "promises a refreshing approach" that goes beyond the limits of traditional delineations of knowledge, overcoming disciplinary pretensions to dominance by providing a key to the twin challenges of knowledge integration and phenomena complexity. Interdisciplinarity

provides the intellectual medium to negotiate the borderlands between the different perspectives, assumptions, and theories embedded in different disciplinary paradigms. Thus, interdisciplinarity demands the decoding, even the deconstruction, of disciplinary epistemologies toward a meta-cognitive reconstruction of knowledge. Insofar as epistemology "is how disciplines actually frame knowledge and 'see' reality," says Welch, interdisciplinarity integrates the disciplines themselves. But it does so in a contingent, non-linear and non-totalizing way, leaving the outcomes indeterminate, and embracing, instead, "fluid, dynamic and pluralistic epistemological strategies." As he says, "The interdisciplinary critique of the disciplines, at its core, questions reductionism, in particular the divide and conquer strategy of isolating phenomena into discrete categories that each require specialized methods of inquiry." Welch, then, takes up Klein's (1996) challenge that "good interdisciplinary work requires a strong degree of epistemological reflexivity" by examining and situating the metaphor of interdisciplinarity in relation to key philosophical strategies in the Western philosophical tradition. This includes the three principles of (1) logical determinism, (2) duality, and (3) absolute truth that are contained in the primary texts of the lineage of philosophers from Plato, Aristotle and Descartes through Hegel. In the process, he acknowledges that by challenging disciplinary structure, interdisciplinarity "questions and responds to the epistemological ideas within which they are framed." Thus Welch's article provides an initial survey that uncovers "the ways in which interdisciplinarity is involved in the History of Ideas," and demonstrates "how the interdisciplinary approach to knowledge is an extension of and a response to the insights and problems developed within Western epistemology."

This critical philosophical reflection continues with the fourth article, "Rethinking Integration in Interdisciplinary Studies" by Ken Fuchsman of the University of Connecticut, who takes us back to debates at the beginning of the field. Indeed, Fuchsman raises epistemological questions for interdisciplinarity that have not yet been fully addressed. He challenges the extent to which we have settled the case for an adequate definition of interdisciplinarity. In particular, he examines the implications for the definition of interdisciplinarity of disciplinary fragmentation, cross-disciplinary connections, and interdisciplines. He says that "Disciplines can be wildly flourishing jungles fragmented by insular sub-fields and competing research programs," which can considerably complicate the task of integrating, resulting in "full, partial, incomplete and multiple integrations." While several interdisciplinary scholars have discussed many

of these issues in a variety of publications, no one has organized them and assessed their overall implication for the definition of IDS.

In the fifth article of the volume, "A Critical Review of Harvard's Project Zero," Stephanie R. deLusé, of Arizona State's School of Letters and Sciences, examines what researchers looking at the interdisciplinary research process do in their own research. Put simply, is the study of interdisciplinary research itself interdisciplinary, and does it need to be? To explore this question deLusé delves into the significant work conducted by the Interdisciplinary Studies Project (Project Zero), Harvard Graduate School of Education. In particular she reviews the GoodWork® Project within Project Zero and its subsidiary, the GoodWork® Interdisciplinary Studies Project. It is useful for interdisciplinarians to appreciate the important contributions to the literature and practice of interdisciplinarity of this research endeavor. DeLusé describes the project's Delphi-type research method: interviews with successful people in many fields with the goal of inductively identifying best practices in the interdisciplinary research process. While she applauds the insights of their method, she ironically suggests that this research effort could take a more interdisciplinary approach. She urges the project's researchers to read widely (and cite) relevant literature on interdisciplinarity before doing the interviews in order to be able to probe more deeply into motivations and understandings of interdisciplinary researchers and teachers. She argues that while inductive techniques for drawing lessons from a set of interviews are valuable, they could be combined with a more deductive approach that draws questions from the wider literature. More effort should be invested in investigating the similarities and differences across different fields in which interviews were performed. Last but not least, says deLusé, rather than publishing non-refereed, rarely cited research reports on the project's website, more effort could be expended on integrating the research results with related literature in a more conventional forum for dissemination, such as peer reviewed journals or chapters in books.

Finally, in the sixth article, "Resisting Curriculum Integration: Do Good Fences Make Good Neighbors?" Ken Badley of George Fox University reviews the current state of integration in school education. Badley is particularly interested in the challenges and resistance to those who believe in integrated curriculum (IC) in the K-12 experience. After defining curriculum integration he places resistance to IC in the historical context of pedagogy and curriculum reform, particularly the activities of the 19th century Herbart Society, reflected in the present day National Society for the Study of Education or NSSE, that struggled

to have students understand the interrelation between subjects. Badley reviews four kinds of arguments offered by the critics of curriculum integration. First, he identifies the linguistic and usage limitations of curriculum integration. He then examines practical and institutional difficulties related to implementing integrated curriculum. He moves on to discuss psychological and sociological dimensions of resistance, before considering its epistemological dimensions. He points out that what has bedeviled curriculum integration in K-12 education has its counterpart in criticisms of integration across disciplines in higher education, including the marginalization by disciplinarians who hold the power in educational institutions and who police disciplinary boundaries. Appropriately for this volume, Badley ends with a consideration of the contentious epistemological objections raised against curriculum integration, not least to the debates about "the epistemic status of the academic disciplines in relation to ontology, and about social, economic and gender perspectives on epistemology." He takes us back to the beginning by considering "resisters" to curriculum integration who see it denying the assumed reality of the world. But he also considers social constructionists who challenge that ontological and epistemological reading of integration, reinforcing the view of those who see reality and integration as mutually *in*clusive. Reflecting a move seen in progressive interdisciplinary general education, Badley suggests that subjects or courses need not be discipline specific, and that research on learning outcome effectiveness of both integrated curriculum and integrated teaching will prove positive, with the hope that resistance may eventually wither. He says this will ultimately increase students' grasp of disciplinary and interdisciplinary knowledge. As the last article in this volume, Badley's contribution offers a segue to the thematic 2010 volume of *Issues in Integrative Studies* on interdisciplinarity in schools which will be edited by Yves Lenoir of the University of Sherbrooke in Quebec and Julie Thompson Klein of Wayne State University in Detroit.

Together, then, this volume puts reflexivity back into interdisciplinary thinking and demonstrates that the field has come a very long way since its early days. As we look to the future challenges of our expanding and maturing field, I encourage you all to visit San Diego to attend the 32nd Annual Conference of the Association for Integrative Studies on the topic of "Interdisciplinary Approaches to Ethics and Sustainability" as a place to explore these philosophical issues as they apply to interdisciplinarity, ethics and sustainability.

Stuart Henry

References

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