Journal of Research Practice
Volume 3, Issue 2, Article M18, 2007

ISSN: 1712-851X

Main Article:

Interdisciplinary Studies and the Bridging Disciplines: A Matter of Process

Dawn Youngblood
Edwin J. Foscue Map Library, Southern Methodist University, P. O. Box 135, Dallas, TX 75275, USA
dyoungbl@smu.edu

Abstract

Bridging disciplines have much to teach regarding how to combine analytical tools to tackle problems and questions that cross traditional disciplinary boundaries. This article explores interdisciplinary aspects of two long established bridging disciplines--geography and anthropology--in order to consider what the relatively young undertaking labeled "interdisciplinary studies" can learn from their long existence. It considers the fallacy of nomothetic claim as well as the fruitful production of solutions by viewing process (methodology), not domain (academic turf), as the key to interdisciplinary success. Staking claim to interdisciplinarity is shown to be unproductive while finding the need for interdisciplinary approaches and following the mandates of that need strengthens both the disciplines and interdisciplinary studies.

Keywords: interdisciplinary studies; bridging discipline; geography; anthropology; process; domain

Suggested Citation: Youngblood, D. (2007). Multidisciplinarity, interdisciplinarity, and bridging disciplines: A matter of process. *Journal of Research Practice, 3*(2), Article M18. Retrieved [date of access], from http://jrp.icaap.org/index.php/jrp/article/view/104/101

---

1. The Call of Interdisciplinary Studies

No discipline is an island entire in itself. That is to say, disciplines are by no means discrete entities--they necessarily overlap, borrow, and encroach upon one another. Within each discipline are sub-disciplines that may behave with as great a sense of separation as exists between separately defined disciplines. Further, as each discipline

evolves, the very definition of it may change. As these definitions change, a particular discipline may increasingly "bump up" against other disciplines. While the above are accepted *a priori* for all disciplines to a greater or lesser degree, some disciplines are well known for their particularly interdisciplinary or "bridging" character. That is, they may within the one discipline cover physical and social sciences as well as humanities as they focus on considering interrelations between realms of knowledge. What, then, is the difference between multidisciplinary and interdisciplinary efforts compared to efforts within a bridging discipline? Ancillary questions might be: what can interdisciplinary studies learn from the bridging disciplines, and is training within a bridging discipline particularly suited for direction of or participation in multidisciplinary and interdisciplinary research? To be clear:

(a) *Multidisciplinary* is what happens when members of two or more disciplines cooperate, using the tools and knowledge of their disciplines in new ways to consider multifaceted problems that have at least one tentacle in another area of study. A prominent example can be found in the work of the Santa Fe Institute (Dillon, 2001).

(b) *Interdisciplinary* or *integrative studies* is what happens when researchers go beyond establishing a common meeting place to developing new method and theory crafted to transcend the disciplines in order to solve problems (Newell, 2001; Repko, 2005).

(c) *Bridging disciplines*: It should be recognized that all disciplines have not followed parallel pathways. Some are, by nature, bridging disciplines. Bridging disciplines involve domains so broad as to encompass the physical and social sciences as well as the humanities. Two such disciplines are geography and anthropology (Youngblood, 2006).

Related terms are considered elsewhere in this special issue, but these three will suffice for the topic at hand. In multidisciplinarity, tools and expertise from one discipline are applied to a problem in another. A classic example: the discovery and development of radiocarbon dating by chemist Willard Libby and the resultant tremendous applications to archaeology. For successfully applying his method toward problem solving impacting another discipline, Libby received the Nobel Prize in chemistry in 1960. In interdisciplinarity, the goal is to analyze what each discipline has to offer and then go beyond what each can offer separately through a process of integration.

Interdisciplinary requires a strong foundation of multidisciplinary endeavor. One must be well grounded in multiple disciplines yet, as Repko (2005) points out, interdisciplinarity is more than transferring multidisciplinary challenges from two or more persons into one. It is a relatively new form of problem-oriented critical thinking focusing on *process* rather than *domain*. By process, I mean working towards solutions, answers to questions, a deeper understanding based on the selection of relevant analytical tools regardless of where or how those tools were developed. By domain, I refer to bounded disciplines with their histories and subcultures. While this movement is young, it should be clear that the development of interdisciplinary efforts strengthens rather than weakens the disciplines. It should also be clear that credit should be given where credit is due. That is, if an analytical tool was developed in a given domain, this should be acknowledged.

2. Interdisciplinarity of Bridging Disciplines

Newell (2001) demonstrates the role of process in interdisciplinarity and how, by its very nature, integrative studies increases the relevancy of the disciplines by using the example of a researcher or team of researchers who are determined to solve the problem of acid rain. The solution involves knowledge ranging from chemical to cultural. Newell invites us to consider acid rain as an interdisciplinary problem involving just such a range of disciplines. Now consider an environmental researcher within a single discipline of, say, geography. This geographer--a member of a single bridging discipline has devoted herself to pursuing an interdisciplinary study focused on solving the problem of acid rain. In order to be successful, she may find it just as necessary as will the practitioner of interdisciplinary studies to develop an understanding of issues ranging from chemistry to culture. What is the difference between a geographer seeking a solution to acid rain and the interdisciplinarian? What lessons can interdisciplinarians learn from the long-established bridging disciplines? Can the experience of bridging disciplines be useful to improve upon the process of interdisciplinary studies or can it shed light on how they might function in the long run? To what extent have these bridging disciplines succeeded or failed in the quest to answer grand questions and solve real problems that cross multiple disciplinary lines? Are those with training in such bridging disciplines particularly well prepared to craft interdisciplinary method and theory?

I wish to consider these questions by looking at two bridging disciplines--anthropology and geography--beginning with basic definitions, moving through my own experience then extending out into the relevant literature. A bridging discipline is necessarily broad in scope, casting a wide net that falls into the turf of many academic domains. For instance, the broad goal of anthropology is to answer questions regarding humans and human society. The term *anthropology* refers to the study of humans (from Greek: *anthropos*, human beings, and *logos*, speech); literally, to talk about human beings. Nomothetically speaking--that is, if one abides by the vast and general territory staked out by a discipline's definition--all social and behavioral sciences would fall into some subset of this study of humans. Further, all humanities that seek to understand the human condition might be viewed as a subset. Thus, if one abides by the definition of the term, rather than the actual practice including the active development of method and theory, anthropology would integrate all social and behavioral sciences as well as those arenas of the humanities that seek to understand the human experience, past and present. Members of other disciplines clearly beg to differ. A psychologist, economist, historian, or political scientist hardly considers himself or herself an anthropologist, even though the goal and meaning of anthropology includes their work.

In the same light, the goal of geography is the undertaking of describing the earth. The word derives from the Greek *geo*, earth, and *graphein*, to describe). This leaves out very little science unless one is an astronaut. If one embraces the largest meaning of the term *geography*, even fictional literature can be seen as an attempt to describe the earth.

Due to its geospatial technologies, such as Geographic Information Systems (GIS), as well as the broadness of its domain and therefore its ability to encompass much needed

multidisciplinary studies, geography views itself as in an expansive mode--a waxing rather than waning phase in the history of the discipline. As one practitioner states:

> With a growing trend toward complex environmental systems research, geography will attract new members from other disciplines, discourses, and methods seeking a "safe haven" in geography departments so they might conduct interdisciplinary environmental research in an otherwise disciplinary-focused academy that is hostile to integrative work, and in so joining, also gain access to the technical and intellectual base of geospatial information technologies needed to consider environmental questions. (Skole, 2004, p. 739)

David Skole goes on to point out that " Geography's community and pedigree" is likely to change as the discipline embraces "new immigrants from other disciplinary domains" who wish to take advantage of the technologies and "interdisciplinary synthesis" that geography offers. Skole states an explicit goal of prospering in this new agenda by the discipline opening itself to the assimilation of other disciplinary ideas and people. "In the next one hundred years," he says "we will need to evermore foster this discipline as the great interdisciplinary melting pot and embrace new members and their ideas" (Skole, 2004, p. 739)

Skole embraces the fact that change is emerging in the way science is done. He recognizes that the National Science Foundation (NSF) of USA has recently developed a new cross-directorate program on Environmental Research and Education (ERE), with a focus on creating opportunities for interdisciplinary research on complex environmental systems.

3. Disconnect Within Disciplines

While Skole offers an optimistic view of a united front for geography's interdisciplinary status, turf wars are at least as common within disciplines as across them. Turner describes geography's history of contested identities as one of internecine conflict (Turner, 2002). Debate continues about the interrelationships between human and physical geography and their different research and publication practices. British geographer Johnston (2003) performed an analysis of all publications submitted by UK geographers to the 2001 Research Assessment Exercise--a peer review exercise to evaluate the quality of research in UK higher education institutions--identifying a substantial difference between human and physical geographers in their publication strategies. Most physical geographers place their research papers in specialized interdisciplinary journals and make relatively little use of geography outlets: most human geographers, on the other hand, publish in geography journals. Comparisons with other disciplines in the environmental and social sciences respectively identify similar results. The conclusion is that, with regard to research and publication at least, UK geography cannot be presented as a single academic community with strong internal ties, but rather as a conglomerate of separate communities writing for different audiences (Johnston, 2003). This appears to confirm quantifiably the contentions of Turner. Turf wars in

disciplinary domains occur not only across disciplines but also within disciplines. While I have singled out the bridging discipline of geography, practitioners within many other domains will recognize the phenomenon.

Such rifts can eventually lead to disciplinary splits. Anthropology was founded by defectors from geography. Key among these was German trained geographer turned anthropologist, Franz Boaz, who founded the anthropology department at Columbia University in New York, USA. Readers should have no difficulty recognizing that many of the same turf wars, divisions, and disconnects that occur in geography have occurred in other disciplines as well.

Anthropology itself has long been divided into three major subdisciplines--physical or biological anthropology, cultural or social anthropology, and archaeology. Like the divide in geography, physical and cultural have been uncomfortable bedfellows for decades, particularly since postmodernism gained a degree of ascendancy in cultural enclaves in the 1980s.

The lesson here for interdisciplinary studies is that integration is by no means a new phenomena. On the contrary, integration is the older phenomena. I will spare the reader a history of the university system and a discussion of natural philosophy. The point is that taking a look at the fractures that have occurred in integrative endeavors as well as the ties that have successfully held bridging disciplines together and why is instructive.

4. Research Practice of Integration

These fractures and integrative restructurings seem to occur in waves. For example, just as the experience of the aforementioned virtual divorce was occurring in anthropology, a strong and ever-growing embrace of multidisciplinary methods, particularly in archaeology, was developing. For example, disciplines formed including geoarchaeology – the application of geology to archaeology; ethnohistory--the application of history; and ethnobotany or archaeobotany--the application of botany. The result is not only an array of new specializations but the *integrative* use of them to answer broad research questions.

By seeking to solve problems that were best approached utilizing expertise from other domains, new interdisciplinary connections were formed. This occurred because practitioners were seeking solutions to problems; answers to questions that required the expertise of another discipline. By focusing on process and problem-solving rather than domain, these connections were forged. Contrast this with claiming academic turf by definition, as exemplified in the following case. A particular prominent and well-respected historian once claimed within my hearing that the human past starting from 1 minute ago to early hominids is actually the domain of history by definition, as history is no longer seen as just the written record but all of the human past. Here is a grand claim based on semantics. Where is new knowledge and new hope for greater understanding--that is, fruitful academic endeavor on the topic of early hominids--truly occurring? Are groundbreaking discoveries occurring in history departments across the globe? Bonnie Martin, a colleague in history, recently witnessed the following:

> In June, 2007, I attended a joint conference for scholars of eighteenth-century literature and eighteenth-century history. In one session, two participants described their experience of jointly creating and teaching a "multidisciplinary" college-level course on colonial literature and history. After several years of experimentation, their stated goal had become to expose students to both the complexity of colonial life and the analytical reality that 'there are no easy answers in life, literature, and history.' It was clear that the course crafted by these two experts was exciting both for them and for their students. It was also clear that their design presented the two disciplines as competing monologues rather than a complementary dialogue. The literature specialist believed that historians do not know how to read texts, while the historian was frustrated that his colleague did not worry about what actually happened in the past. They agreed, however, that the inevitable confusion created in the minds of the students was justified and desirable because it encouraged each individual to construct a personal interpretation that captured the tensions of the era.
>
> Many in the audience must have left that session as I did wondering what might have been accomplished if the two scholars had framed shared questions and then pooled their knowledge and techniques. What if the historian had explained to students how learning the code of conventional phrases and analogies in letters from his colleague had fined tuned his understanding of the debate over independence? What if the scholar of literature discussed how her colleague's insights into the economic, sectional, and demographic pressures came to inform her analysis of personal letters, poetry, plays, and public declarations, and how colonial literary conventions had cracked under the strain of political dissension? The students might get the idea that using a multidisciplinary approach has the advantage of bringing more tools and adding more dimensions to our reconstructions of the past. They might see how such an approach adds detail and animation to the holograms scholars create from the fragments that have come down to us from what was once a complex whole. (B. Martin, personal communication, May 24, 2007).

Martin's experience is an excellent example of the need to find common purpose. What can interdisciplinary studies learn from the decades, even centuries, of experience under the bridging disciplines? I conclude, solutions to truly interdisciplinary problems are best sought by:

(a) selecting the right analytical tools or *process*, and crediting the contributors with the development of those methods regardless of domain and

(b) avoiding nomothetic turf-claiming; self-defined similarities in turf do not help disciplinarians reconcile basic differences in the kinds of questions they ask or the kinds of methods they use to answer them.

Formulating shared questions is most critical. Agreement on a shared goal requires a willingness to compare discoveries and methods, which hopefully will inspire scholars to make new discoveries and to design new methods. Shared questions drive us into uncharted territory.

If interdisciplinary study is a process and not a domain, then no amount of definitional inclusiveness in terms of territoriality will make a study interdisciplinary in nature. What interdisciplinary studies can therefore learn from the bridging disciplines is the importance of not becoming a domain, as domain creates territory and territory creates niche dominance. Instead, focus on the process of finding solutions to problems and answers to important questions.

Acknowledgments

I am thankful for the comments of five reviewers as well as suggestions and improvements made by the editors of this special issue. Special thanks to Bonnie Martin, Research Fellow in the History Department at Yale University, USA and to C. Reid Ferring, Professor, Department of Geography and Institute of Applied Sciences, and Director, Center for Environmental Archaeology, University of North Texas, USA, for their valuable insights.

References

Dillon, D. (2001). *A review of the Santa Fe Institute: Institutional and individual qualities of expert interdisciplinary work* [Working Paper]. Harvard Graduate School of Education, Cambridge, MA. Retrieved October 30, 2007, from http://pzweb.harvard.edu/interdisciplinary/pdf/SantaFe.pdf

Johnston, R. (2003) Geography: A different sort of discipline? *Transactions of the Institute of British Geographers, 28*(2), 133-141.

Newell, W. H. (2001). A theory of interdisciplinary studies. *Issues in Integrative Studies, 19*, 1-25. Retrieved October 30, 2007, from http://www.units.muohio.edu/aisorg/pubs/issues1/restricted/042/paper.pdf

Repko, A. (2005). *Interdisciplinary practice: A student guide to research and writing* (Preliminary edition). Boston: Pearson Custom.

Skole, D. L. (2004). Geography as a great intellectual melting pot and the preeminent interdisciplinary environmental discipline. *Annals of the Association of American Geographers, 94*(4), 739-743.

Turner, B. L. (2002). Contested identities: Human-environment geography and disciplinary implications in a restructuring academy. *Annals of the Association of American Geographers, 92*(1), 52-74.

Youngblood, D. (2006). Map use across the disciplines. *Journal of Map and Geography Libraries, 2*(2), 33-66.

Received 21 May 2007

Accepted 21 September 2007
