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The Practice of Interdisciplinarity: Complex Conditions and the Potential of Interdisciplinary Theory¹

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Abstract: This article illustrates the formulation of interdisciplinary process presented in Bill Newell's article, "A Theory of Interdisciplinary Studies," by examining a "self-organized" community effort. This effort shows the power of interdisciplinary process, whether consciously or unconsciously applied, in a social setting. It also guides our understanding of the potential strengths and limits of the interdisciplinary process, especially in complex social systems.

Introduction

MY COLLEAGUE, WILLIAM NEWELL (2001), in his article, "A Theory of Interdisciplinary Studies," has described the interdisciplinary process as a specific series of steps designed to allow the creation of new outcomes and insights that could not otherwise be achieved. The interdisciplinary process holds enormous potential for application in a variety of settings, including the analysis of social issues and the derivation of new solutions to those issues. This potential to derive new solutions is especially true of interdisciplinary methods as applied to social problems. This article attempts to illustrate how interdisciplinary processes lead to creative solution making that is collective, participatory, engaging, and inclusive in a complex environment. We suggest that without the use of an interdisciplinary protocol, like the one suggested by Newell, solution making such as that exemplified here would be unlikely to have the above characteristics in the same degree. Newell (2001) has also argued the centrality of complexity to the interdisciplinary process. This article will examine that argument as it applies to the application of interdisciplinary protocols in

social settings. Such application is what Julie Klein refers to as “*deciding* about future management or disposition of the task” (Newell, 2001, p. 14) or what William Newell refers to as “*testing* the understanding by attempting to solve the problem” (p. 15). Newell implies that the interdisciplinary-complexity connection is the *sine qua non* of interdisciplinary study and the outcome of the interdisciplinary process is the intellectual delight of integration. This article challenges the narrow understanding of interdisciplinary as primarily intellectual and seeks to describe the less appreciated power of interdisciplinary protocols to solve complex social problems.

The Marriage: Complexity, Interdisciplinary Process, and Practice

In the exploration of social problems, we can usefully marry at least three domains of academic and social inquiry: (1) the domain of understanding complexity as a social condition; (2) the domain of solution generation (the interdisciplinary process); and (3) the domain of practice, which includes decision making and action. Julie Klein (1999) has referred to this latter domain as an “instrumental form of interdisciplinarity” (p. 1). In the field of complexity theory, the implementation of solutions may also be referred to as *self-organization*.

This paper proposes that the marriage of these three domains² will allow us to visualize and interpret a meaningful experiment of social intervention in urban communities in Los Angeles, California: the creation of an Institute for Community Leadership. The marriage is also intended to draw some lessons for interdisciplinary theory, especially focusing on implications of the interdisciplinary process as a social technology and as an applied experience.

Prior to examining how the institute was created, it is useful to discuss the nature of the environment surrounding the institute. We will then briefly review the interdisciplinary protocol that purports to create interdisciplinary solutions, and how this protocol was reflected in the creation of the Institute.

The Condition of Complexity

Following Newell (1999), we will use the term complexity to refer to a system in which:

- there are contradictory or conflicting elements;
- these elements (while contradictory or conflicting) are held together

- and interact within the system;
- the interaction of these elements produces self-organizing patterns, referred to as attractors, that form a “basin of attraction”;
- these elements can be viewed differently, from different perspectives, which highlight their multifaceted nature.

In our previous work (Newell and Meek, 1997), we established several examples of how our current social systems can best be viewed as complex social systems that produce self-organizing patterns. These patterns include new forms of association, such as co-production social services, networks of administrative units, and inter-organizational agreements. As social systems, these patterns should be considered a result of free will such that each interaction contributes to each other’s production in a manner that is self-organizing, and the pattern should be viewed as multi-dimensional. Newell (1999) used a rather common example, marriage, to illustrate the multi-dimensional nature of complex systems: marriage can be viewed “simultaneously as economic, social, cultural, and religious.”³ This multi-dimensional character of elements and interactions challenges participants when faced with new problems. Traditional systems, and traditional solutions seem not to be enough because they do not incorporate the multi-dimensional nature of the problem. We need to see urban communities in new ways.

Fortunately, some scholars in the field of public administration are now offering new interpretations of urban environments. What scholars are now observing are new and emerging forms of arrangement among citizens, policy makers, and governments (Frederickson, 1997). These new forms of arrangement are a recognition of the inability of the state as government—organized through bureaucracies, and represented through increasingly meaningless geographic jurisdictions—to be responsive to citizen’s needs and the creation of social good. Simply stated, social problems have outpaced traditional solutions. This condition represents a “disconjunctive state” (Frederickson, 1999),⁴ a condition where social issues have overcome bureaucratic solutions. For our purposes, this condition is one of complexity.

The case experience from which this article draws lessons, is one where a thoughtful local hospital administrator, under the sponsorship of senior management, engaged in developing several outreach programs intended to provide services to people in the geographical area served by the hospital. In coincidental support of this administrator’s initiative, the state of California recently passed a law that not-for-profit healthcare institutions justify their status by delineating their community services. So, given this clear mandate

for institutions to address community service, many organizations will face the problems that complex social settings pose, and that interdisciplinary understanding and protocols may help solve.

The adventure into community programs, however, will be an enormous challenge for several reasons identified by recent works in political science. First, as noted by Robert Putnam (1999), there is a marked decline in social capital, a condition he calls a “dissociated state” which echoes the disconjunctive state, referred to earlier. Civic capital is an institutional cornerstone of functional social relationships and system cohesion, and without it, traditional solutions are far less dependable. Putnam has also observed dissociation from civic duty not only in generation of funds, but also in involvement. Involvement in voluntary associations and social organizations has characterized the American social fabric since the observations of Alexis de Tocqueville in the 1830s, but the traditional ways of luring that involvement have been seriously challenged. Second, as observed by Joseph Nye and others, there has been a steady decline in the public trust of government (Nye, Zeliko, and King, 1997). According to Nye, confidence in American government has been declining for three decades. Three-quarters of Americans said they trusted the federal government to do the right thing in 1964. Today, only a quarter does.⁵ This lack of confidence in government may be matched by a new generation’s general lack of confidence in institutions. According to some, institutions are not seen as problem solvers or places where some groups of individuals can experience their issues being significantly addressed. These groups are turning away from traditional institutions to create solutions, many of which involve new forms of associations.

What is useful to recognize here is the fundamental change in the nature of associations and relations among citizens, policy makers, civic leaders, and government in metropolitan areas. *What seems to be happening is the slow movement away from government to governance!* Governance is characterized by a public administration that facilitates the associations of citizens and social organizations in order to produce social goods and services. This is a very different state of affairs than the functionally distinct roles for the state, the citizens, and private institutions, where institutional clarity and role were familiar. Today, government is no longer viewed as the problem solver, but can be viewed as a pathway to solution making. In this complex environment, new forms of association, especially those formed by institutions whose leadership recognizes the changing nature of problem-solution, are emerging. Such initiation, referred to by some as *epistemic*, is likely to be born from the use of interdisciplinary thinking that forms the bridges be-

tween complex problems and solution making (Haas, 1992).

In addition, the complex conditions we now face have created a yearning for community, a feeling that institutions are limited in their ability to resolve issues, to represent meaningful citizen needs. The limitations of governmental institutions, and the call for community-based initiatives will necessitate the creation of new forms of interaction and new forms of association. George Frederickson (1998) has argued that there will be a paradigm shift in the movement from the institutional focus of urban city life to a community focus. This paradigm shift will require addressing central questions such as: What is meant by community? What will govern the associations of community? What central features of community will replace the institutional paradigm? The chief social changes, the shift, will be from:

- efficiency, equity, and order to *civil discourse*, trust, and responsibility;
- law and regulations to norms of *civil reciprocity*;
- representative debate to *participating and education*;
- winners and losers and compromise to *consensus and mediation*;
- governed and led to *belonging and connection*; and
- institution, jurisdiction, districts/precincts, hierarchy to *neighborhoods, groups, and multi-institutional associations*.

These changes represent new relationships among the governed and between the government and the governed. How we achieve these new relationships, how new forms of relationships will be developed, and the role in this process of interdisciplinary protocols can be glimpsed in the case that follows.

Initiation of the Institute of Community Leadership

The Institute of Community Leadership (the Institute) is a new southern California academy dedicated to educating and strengthening leaders for the task of transforming their communities. The Institute is a joint project of the Citrus Valley Health Partners, Immaculate Heart College Center, the Los Angeles County Department of Health Services, the UCLA School of Public Health, and the University of La Verne. Its programs' goals are to develop the leadership capacity of a diverse group—community activists and students and leaders from the public, private, and nonprofit sectors throughout southern California—specifically with a focus on promoting vital social, economic, and environmental transformation on behalf of the

common good.

Two characteristics are useful to recognize in the formation and meaning of this institute. First, the institute could not have been possible without the vision of Tom McGuinness, the central figure at Citrus Health Partners who helped to form a network of stakeholder individuals and institutions. McGuinness was heavily influenced by Harvard Professor Mark Moore's inspirational work, *Creating Public Value* (1995). Moore's argument, that current institutions must find a way to create public value, inspired McGuinness, and many others, to examine ways existing institutions can create positive futures for the public good. Second, McGuinness's leadership led to the formation of a network of individuals who shared common experiences even though they worked in separate institutions and bureaucracies. In McGuinness's view, each participant held part of the leadership solution in communities. While the academics had insight into curriculum, the hospitals had the resources and expertise in medical care, and the government had access to financial resources. McGuinness's idea was that this network would work together to form an association that could offer solutions to complex problems in a complex environment.

Forming of Principles: Representations of Interdisciplinarity

Through one year of workshops, brainstorming sessions, and countless input seminars from various disciplinary sources, the network formed an interdisciplinary framework of action culminating in the Institute's principles. These principles are summarized below:

The foundational principles guiding the Institute for Community Leadership are based on the fundamental belief that all resources and systems should serve to enhance and strengthen healthier communities. These principles include:

Economics	Financial and related resource decisions are guided by a vision of a just and sustainable society.
Generativity	Communities transfer shaped wisdom, creating a legacy and inheritance for future generations.
Public Trust	Public, private, and not-for-profit sectors share individual social responsibilities.
Women	The spirit and power of women's voices are equally valued.

Common Good	To be fully alive is to work for the common good.
Empowerment	Knowledge that enables people to claim their own power based on their own experiences.
Interdependence	The fabric of community is woven by the interaction of its systems and human networks.
Inclusiveness	Reach beyond diversity to ensure that the concerns of all stakeholders are equally valued.
Innovation	Create new ways of solving existing and emerging problems.
Capacity Building	Broaden and deepen individual and institutional willingness and ability to serve others.
Justice	Actively address systemic issues that create oppression and inequality.
Community	All resources and systems are interwoven to enhance and strengthen communities and promote healthier living environments.
Integration	Heal existing fragmentation and polarization in communities.
Capital	Market, public, social, and spiritual resources are the basic building blocks of community renewal.
Added Value	Advance the common good beyond the mandates and traditionally expected results.
Renewal	Embrace and utilize the multi-racial, multi-linguistic, multi-cultural, multi-class, and gender-equal strengths of the community to advance the common good. (See http://www.ph.ucla.edu/icl/principles.html)

Once the principles for guiding the Institute for Community Leadership were established, the next step was to select individuals for the institute. After much deliberation, the network decided that selection should be made from those who play significant roles in communities, those who represent organizations and institutions, and those who show a commitment to community enhancement. In January of 1999, the first class of twenty-five participants from diverse geographic locations began course work at the Institute. Under the guidance of six faculty, the institute was conducted over a two-year period. (For a description of the program, see Appendix 1). The institute culminates in the design and implementation of a community project that is reviewed and approved by the faculty. The project is interdisciplinary

by necessity and design.

Table. Three Domain Comparison

This table provides a summary of the three domains addressed in this article: the domain of interdisciplinary process, the domain of complexity, and the domain of practice. The table highlights the connections that Newell (1999) stresses between complexity and interdisciplinarity. The table also lists the connections between the Institute for Community Leadership case study and the interdisciplinary process so that we can see how the interdisciplinary process played a role in solution making. According to Newell (2001), the interdisciplinary process can be characterized as an inquiry with thirteen stages that I have shortened to eleven (pp. 14-16).

Table: Three-Domain Comparison

Interdisciplinary Process	Complexity	Case: Leadership Institute Creation
Set out problem	Identify a specific location of a problem*	Creation of healthy communities through transformational leadership
Identify relevant disciplines	Dependent on problem in relation to complex condition	One year of input sessions with academic disciplines, practice disciplines
Develop working command of relevant concepts of each discipline	Dependent on problem in relation to complex condition	Workshop sessions with network participants
Study the problem from each disciplinary perspective	Study aspects (behaviors) of reality in that location	Workshop sessions with network participants
Produce disciplinary insights from the problem	Illuminate those aspects (behavior)	Workshop sessions with network participants; see guiding principles of the Institute
Use disciplines to illuminate each others' assumptions (exposing source of conflict)	Locate inconsistencies in that location; demonstrate conflict among principles at work in the larger reality	Workshop sessions with network participants
Evaluate assumptions in context of specific problem	Determine which principles are at work in this location and their relative strength	Workshop sessions with network participants.
Create common ground	Identify sources of coherence in that location	Workshop sessions with network participants; see guiding principles of the Institute
Construct new understanding of the problem	Model complexity in that location	Selection of institute members; formation of problem setting by members
Identify a metaphor or theme that captures the understanding	Summarize pattern produced by complexity in that location	Motto: To be fully alive is to work for the common good
Test the understanding by attempting to solve the problem	Manipulate that location	Institute courses and projects

Implications for Interdisciplinarity: Current Status and the Examination of Outcomes

We can now turn to the central themes addressed by the case study. Two areas deserve attention. First, it would seem that the Institute for Community Leadership is an outcome of an interdisciplinary process. Members of the sponsoring institutions joined forces and worked through various disciplinary considerations in order to design the guiding principles of the Institute. Interviews with the participants, however, indicate that while input from various sources and disciplines and perspectives was sought, the process did not follow the narrowly defined protocol for the development of interdisciplinary insight. On the other hand, while the process used in the creation of the Institute was not an example of intentional interdisciplinarity, the qualities of the interdisciplinary process were clearly present. This example illustrates that if we view the interdisciplinary process as a social technology to be employed when confronted with complex social conditions, the intentional, conscious, interdisciplinary protocol may not be required for desirable outcomes; having the elements of the interdisciplinary process in evidence may be all that is necessary. Thus, one can argue that many solutions to complex problems may have been truly interdisciplinary but may not have been recognized as such. In addition, one might conjecture that failed solutions to complex problems have not been based on elements of the interdisciplinary process. *The key point is that there is evidence that interdisciplinarity, whether consciously applied or not, has much to offer to those who are seeking solutions to complex conditions.*

Second, interdisciplinary solution-making practices, illustrated by this case study, may lead to solutions that challenge the status quo or the stability of the very social system it attempts to address. While complexity calls for integrative solutions that one would assume would be benign, such solutions may create a confusing relationship with the existing order that may limit the solution-making potential of the interdisciplinary social technology. In the case of the Institute, and additional community programs headed by the network of Institute sponsors, competition for scarce public funds arose. County funding of health programs has traditionally been channeled through known hierarchies who are held accountable for the expenditure of funds as well as the delivery and effectiveness of services. With the development of newly formed associations, traditional hierarchies, represented in the associations, found themselves competing with those associations for the same resources. This direct conflict of interest can be viewed as a zero-sum conflict that ulti-

mately threatened the status quo or stability of the system. Such a destabilizing condition may result in authorities attempting to limit the emergence of community forces in order to return to traditional allocation systems, despite their record of ineffective or effective service. This then must be recognized as a potential limit on the solution-making potential of instrumental interdisciplinarity.

Conclusion

Newell may overemphasize the intellectual aspect of integration and call for conscious interdisciplinarity, but his characterization of the interdisciplinary process is useful to the public administrator who is trying to help transform complex urban social aggregates into “communities.” The interdisciplinary process doesn’t necessarily have to be applied consciously, but the presence of its elements does seem to facilitate a collective, participatory, engaging, and inclusive decision-making process. Inevitably, such processes will be destabilizing for the traditional power structure, and a multi-dimensional, interdisciplinary, integrative response to this increased complexity seems to have the best chance of creating lasting change.

Biographical Note: Jack W. Meek is Chair and Professor of Public Administration, Department of Public Administration, University of La Verne, La Verne, California. His current research interests are in complexity theory, policy networks, and the behavior of urban systems.

Notes

1. Jack W. Meek originally presented a draft of this article at the 1999 Conference of the Association for Integrative Studies, September 29–October 1 at North Central College in Naperville, Illinois.
2. For a graphic relationship of the marriage proposed in this study, see Appendix 2 of this paper.
3. This image is no longer in Newell’s article, but it is a valid image that works well in this paper, so I have kept it.
4. Conjunctive refers to a connective or joined state of affairs. Professor Frederickson argues that the state is now disconnected from the social issues we are witnessing in metropolitan areas.
5. Why the decline? This question has offered up many suspects, such as national economic conditions, the challenges of a global economy, the Cold War, bumbling bureaucrats, and venal politicians. Nye argues that the most likely culprits are all around us—an interacting blend of cultural and political conflicts stirred by an increasingly corrosive news media.

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Appendices

Appendix 1: The Community Leaders' Academy*

Program Description

Building and sustaining healthier communities requires dedicated, knowledgeable, and committed transformational leaders. The academy offers an opportunity for public, private, and not-for-profit sector leaders and community activists to learn the skills and knowledge vital to successful social, economic, and environmental transformation.

The two-year program offered by the academy consists of eight courses presenting the fundamentals of transformational leadership, as well as the tools and techniques to build and sustain healthier communities.

Each course module is introduced in the leadership conferences by a respected expert providing the framework upon which the course is designed. Courses are sixteen hours in length and, to facilitate participation, are offered on Friday evenings and Saturday mornings.

The eight courses are as follows:

- *Transforming Leadership Through the Science of Complexity Critically*
Analyzes the sciatica of complexity and emphasizes the role science plays in facilitating the vital work of transformational leadership within communities.
- *The Transformational Leader—The Mind, Body, Spirit Connection*
Explores the power and effectiveness of the mind, body, and spirit connection as it relates to the individual, the community, and the insulation.
- *Spirituality and Leadership*
Reviews the role of spirituality in the work of transformational leaders in shaping the values and principles of community wholeness, renewal, and strength.
- *Social Justice, Popular Education, and Participatory Democracy*
Explores ways to expand and revitalize traditional democratic institutions and/or create new ones to increase the level and substance of community participation.
- *Transforming the Institution and Systems*
Evaluates the theories and strategies of planned change and innovation as a basis for managing the transformation of organizations and institutional systems.

- *Transforming Communities from the Inside Out*
Analyzes the process enabling community leaders to redistribute local power and resources toward improving the health and quality of community life.
- *Relationship-Centered Decision Making and Discourse*
Analyzes services and relationships against technology and hierarchical systems as paths to excellence in transformational leadership.
- *Demonstrating Public Value and Social Accountability*
Defines value-based criteria, develops methodologies to review and verify compliance with accepted ethical standards, and documents the value and measures outcomes of community programs and services.

*www.ph.ucla.edu/icl

Appendix 2: Graphic Relationship of the Marriage of Complexity, Interdisciplinarity, and Practice

It may be useful to explore a graphic representation of the marriage relationships purposed in this paper. Most are familiar with a simple system where the relationship is framed between the environment that confronts an actor and an actor. The actor can address the condition and conceive of a response to the environment. Under conditions of complexity, a more complicated graphic representation can usefully visualize the multiple connections possible in responding to a complex environment. Here, multiple feedback loops are possible, creating the possibility for more interactions and increased complexity.

Figure: Systems View of Actor Response to a Complex Environment

