

WINTER, 2003

Chaos & Complexity Theories

SPECIAL INTEREST GROUP NEWSLETTER

President's Remarks

What is a nice psychologist like me doing in this SIG?

My introduction to this SIG was through the work of William Doll. I had learned that the way to attend AERA, for me, was to go through the author index. I look up the people whose work I like and attend sessions that feature their work. So, I came here for the first time because Bill Doll was on the program and I had enjoyed his book. (By the way, if you do not own a copy of his book, *A Post-Modern Perspective on Curriculum*, I think you are missing out on a very important work). The most distinctive thing for me about this tall, white-haired, bow-tied man was the delight, curiosity, and intense intellect that shone in his eyes. His work was, and continues to be, seminal to the work of this SIG and to the thought of many of us. In addition, he has been one of the seen and unseen forces that has shepherded the SIG to its current successful state.

Once here I found a wealth of intellectual companions. I have enjoyed listening to John St. Julien, both in his presentations, which are very thoughtful and thought-provoking and in the wonderful conversations that occur "around the edges", at dinner after the business meeting, and while waiting for sessions to start. Many times I have found myself writing notes on a napkin or quickly jotting something on the top of a page as I continued to think about something I heard John say.

Jayne Fleener's work has been similarly delightful and provocative for me. She has a clarity and depth that I find refreshing and helpful. Her new book, *Curriculum Dynamics: Recreating Heart* is a

joy to read. The breadth of work on which she draws is astounding and her treatment of it is compelling. Please be sure to treat yourself to this book, if you haven't already. It is a good companion to Doll's earlier book.

These three thinkers at the edge of curriculum theory have crafted the meetings, program and operations of the SIG. They have brought the SIG from a small group of people with limited understanding of a fledgling field to where it is today. The quality of the papers has grown each year. The conversations have become more sophisticated and the participants more knowledgeable. Even as we have grown, we have not lost the central notion that this SIG is, above all, about conversation. Papers are treated as conversation-starters, roundtables are structured to support conversation, and business meetings feature presentations as the main course, with a limited serving of business.

When I was a doctoral student in psychology, my dissertation advisor asked me why he had to get a student who "wanted to undermine the foundations of psychology." That wasn't my purpose, really. I was unable to accept as "obvious" some of the assumptions underlying both psychology and its methods. I have discovered the reasons over my years of study in artificial intelligence and chaos and complexity theory. A friend put it succinctly when she said, "you were a zebra running with the horses." I am glad that I found this SIG and the company of the other zebras. If you are a zebra and you are new, welcome home.

-Sherrie Reynolds

84th Annual Meeting of AERA

“Accountability for Educational Quality:
Shared Responsibility”
Chicago, Illinois
April 21 – 25, 2003

In addition to the Wednesday night business meeting, this year's CCT SIG offerings include 7 paper discussions (at 4 different times!), a paper, a panel discussion, and an interactive symposium:

Business Meeting

Sherrie Reynolds presiding

AN INVITED PANEL: LOOKING AT *CURRICULUM DYNAMICS*

Wednesday, 6:15 PM--8:15 PM, Hyatt ,New Orleans ,West Tower - Gold Level

PARTICIPANTS: Sherrie Reynolds, Texas Christian University; Jayne Fleener, U. of Oklahoma; Donna Trueit; Louisiana State University, John St. Julien

Monday

Paper Session

Monday, 12:25 PM--1:55 PM, Swissotel, Vevey, 3rd Floor

Chair: John St. Julien

Embedded Complementarity of Object-based and Aggregate Reasoning in Students' Developing Understanding of Dynamic Systems (Walter Stroup, U. of Utah; Uriel Wilensky, Northwestern U.)

Paper Discussions/Roundtables

Monday, 3:05 PM--3:45 PM, Hyatt, Regency B ,West Tower - Gold Level

TEACHABLE MOMENTS: Sustaining Teachable Moments on the Edge of Chaos (Dan Rea, Georgia Southern University)
-With-

What Happened When a Simple Reflective Exercise Turned Into a Community Generated Matrix of Possibilities: An Experience of Complex Pedagogy in a Professional Development Seminar (Shelley Wells, Louisiana State University)

Tuesday

Paper Discussions/Roundtables

Tuesday, 12:25 PM--1:05 PM, Sheraton, Chicago Ballroom 7, Ballroom Level

EDUCATIONAL POLITICS: Complexity Meets Educational Politics: An Alternative Look at Exclusion & Privilege (Dannielle Davis, U. of Illinois at Urbana-Champaign)

-And-

LEARNING: A Rhizomatic Search for the "Central Mystery of Education": Does Learning Exhibit Complexity (1/f) (Stephen Duplantier, Southeastern Louisiana University)

-And-

TEACHER PREPARATION: The Ecosystem of Teacher Preparation: Understanding the Complex Educational System (Don Duggan-Haas, Cornell University)

Paper Discussions/Roundtables

Tuesday, 1:15 PM--1:55 PM, Hyatt, Regency B, West Tower - Gold Level

DEWEY'S EDUCATIONAL PHILOSOPHY: Complexity Theory and John Dewey (Inna Semetsky, Teachers College Columbia U.)

-And-

PROFESSIONAL LEARNING: Teacher Educators' Professional Learning Described Through The Lens of Chaos and Complexity Theory (Ilana Margolin, Michla Shachar, Michal Zellermyer, and Hayuta Regev, all from Levinsky College of Education)

Interactive Symposium

ETHICS, PSYCHOANALYSIS, AND BUDDHISM IN A COMPLEX SOCIETY: RECONSIDERING THE EDUCATION OF THE POST-HUMANIST SUBJECT

Tuesday, 4:05 PM--5:35 PM, Hyatt, Stetson Suite E, West Tower - Purple Level

Chair: William Pinar, LSU.

The Ethics of the Real: Questions for Education in a Time of Waning Superego (Jan Jagodzinsky, U. of Alberta)

Entre-deux: Reconceptualizing Love and Its Implications for Education (Kaustuv Roy, LSU)

Pedagogical Challenges of Ethical Agency in Violent Times (Claudia Eppert, LSU)

Wednesday

Paper Discussion/Roundtable

Wednesday, 9:05 AM--9:45 AM, Hyatt, Grand Ballroom E, East Tower - Gold Level

NEW SCIENCE: A Round Table Discussion: Heuristic Methodology and New Science Studies (Susan Erwin, Cameron University; John Erwin, MacArthur High School)

Panel Discussion

Wednesday, 10:35 AM--12:05 PM, Swissotel, Vevey, 3rd Floor

Chair: Sarah Smitherman, LSU

CHAOS AND COMPLEXITY FROM A EUROPEAN PERSPECTIVE: Jens Rasmussen and Helle Mathiasen, The Danish University of Education; Ton Jorg, IVLOS Institute of Education.

Business Meeting: Sherrie Reynolds presiding

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PARTICIPANTS: Sherrie Reynolds, Texas Christian University; Jayne Fleener, U. of Oklahoma; Donna Trueit; Louisiana State University, John St. Julien

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Often times it seems that Chaos and Complexity Theories have gotten, well, chaotic and complex. The following *Thoughts on Chaos and Complexity* may help to guide some of our journeys...

CHAOS THEORY is the mathematical analysis of the changes dynamical systems generate. It is the search for order in “disorder.”

Key Features:

- Nonlinearity
- Prediction
- Patterns (fractaled)

Curriculum Applications:

- A developmental approach to teaching/learning.
- Small changes, properly amplified, may lead to major effects.
- Order is imbedded in chaos, the two are conjunctive, not opposed.
- Quality of richness, recursions, relations, & rigor are key elements in curriculum design.
- Predictability is short range at best.

COMPLEXITY THEORY is the study of the process of spontaneous creation and self-organization (autoregulation) which occurs in systems (cosmological, ecological, living, social).

Key Features:

- Autopoiesis and Open Systems
- Cellular Automata
- Dissipative Structures

Curriculum Applications:

- Centralized control works against creativity and self-organization (autoregulation).
- Diffused control works for creativity and self-organization.
- As processes, creativity & self-organization work best when there is the proper tension (an essential tension) between flexibility and formal structure.

QUESTION ? If learning is truly nonlinear, how do we design curriculum and instructional procedures for such?

- Bill Doll

Chaos & Complexity Theories SIG on the Web

The Chaos & Complexity Theories SIG web site has a new, permanent, address and a new location. LSU has very graciously provided web space on one of their servers and the new site is up and functional.

Please change the URL in your bookmarks to our very own domain: <http://ccaerasig.com>.

The website has been updated to include the schedule for our meeting in Chicago. Check there for the latest information about the meeting; it's an easy way to get all your SIG meeting information in one easily readable place. I am in the midst of updating the site. Please let me know if you spot any errors or if you have suggestions for content or design.

- John St. Julien (john@johnstjulien.com)

Recent Books of Note

Curriculum Visions – William E. Doll and Noel Gough (editors)

Curriculum Visions challenges the singular, guiding vision that has dominated Western educational thought for the past four centuries, from Ramus to Tyler and beyond. Influenced by the spirit of Dewey, *Curriculum Visions* moves beyond his ghost to see what he never saw a playful integration of the scientific, the storied, and the spiritiful. In so doing, *Curriculum Visions* asks each of us to develop our own curricular vision, based on a new logic of reason, the personality and culture of society, and the awesomeness and mystery of creation.

Curriculum Dynamics: Recreating Heart – M. Jayne Fleener

“Recreating heart” is a reinvention of the passion for and the love of learning that seems to be missing in our standards-driven curriculum. Based on postmodern logics of relationship, systems, and meaning, (emerging from process philosophies, complex adaptive systems, learning organization theories, and language-games approaches), a dynamic curriculum is conveyed that will allow us to change our way of seeing. This “change of aspect” is necessary for transforming schooling and rejecting the underlying logic of domination inherent in our existing social structures and pervading current debates about schooling. Ultimately, “recreating heart” entails inventing new meaning structures and language games, creating a new way of seeing schooling, and transforming ideas about teaching, learning, society, and the curriculum.

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To join the Chaos and Complexity SIG, renew your membership or update your information for the files, fill out the following and return to:

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CCT SIG Treasurer
15107 Mettle Drive
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Dues are \$5 per year. Please enclose a check or money order, payable to AERA SIG, with your membership.

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