Critical Thinking Movement: 3 Waves

THE CRITICAL THINKING MOVEMENT: 1970-1997:
Putting the 1997 Conference into Historical Perspective
By Richard Paul

Understanding Substantive Critical Thinking
Avoiding the Growing List of Counterfeits
It is now generally conceded that the art of thinking critically is a major missing link in education today, and that effective communication and problem-solving skills, as well as mastery of content, require critical thinking. It is also generally recognized that the ability to think critically becomes more and more important to success in life as the pace of change continues to accelerate and as complexity and interdependence continue to intensify. It is also generally conceded that some major changes in instruction will have to take place to shift the overarching emphasis of instruction from rote memorization to effective critical thinking (as the primary tool of learning).

It is not so clear to most educators how to affect the shift, nor what that shift essentially should affect in. All too often the phrase "critical thinking" is nothing more than a vague place-holder for any of a miscellany of changes and/or conceptions of change. All too often, the phrase is used so imprecisely that no one knows exactly what is being said nor how to assess its unclarified effect. Critical thinking is too important, the reforms it makes possible too essential, to leave the concept to helter-skelter intuitive use.

There are three "waves" of critical thinking research that can be identified since the early 70's. The three waves represent, in essence, different research agendas and point to different emphases in application. Each wave has its committed adherents, and each therefore represents an important choice in laying the foundation for future work in the field. The third wave can accomplish its goals only through a mastery of the most basic insights of the first two waves.

The first wave—based on a focus of the theory of logic, argumentation, and reasoning—has become a field unto itself, dominated by philosophers. First wave theorists tend to focus only on those instances of thinking in which persuasion and argumentation are explicit, and they tend to analyze them with a minimum of background context. They tend to view reasoning and logic in a relatively narrow and technical fashion, ignoring the broad family of related uses of the word 'logic' which one would find in any dictionary of the English Language. The notion of critical thinking as providing the tools for a broad analysis and assessment of thinking in a full range of the contexts in which thinking is at work in human feelings and behavior is not a core notion in the writings of most informal logicians. The result is that they do not take command of the logic of language and the logic of questions-key components of critical thinking. If one views "logical structures" as omnipresent in virtually all human thought, emotion, and behavior, the framework and writings of most informal logic theorists strikes one as generally narrow and specialized.

The second wave, lacking grounding in any one field of study, represents a loose conglomeration of interested persons, producing work of mixed quality, developed from many different

standpoints. This diversity of standpoints gives to second wave research a scattered character. It includes some working on critical thinking from the standpoint of cognitive psychology, some from the standpoint of "critical pedagogy," some from the standpoint of feminism, a variety of others from the standpoint of particular disciplines (such as critical thinking in biology, business, or nursing), and yet others, from the standpoint of some element purportedly missing from first wave research agendas (such as emotion, intuition, imagination, creativity, etc.)

Taken collectively, therefore, second wave projects are more comprehensive than first wave projects, since second wave analysis looks at critical thinking typically outside the tradition of logic and rhetoric. Unfortunately, second wave work (lacking a shared intellectual tradition) is collectively far less integrated, less coherent, and often more "superficial". While exceptional work has been done during the second wave, the gain is too often vague comprehensiveness at the expense of depth and rigor.

The third wave represents a commitment to transcend the predominant weaknesses of the first two waves (rigor without comprehensiveness, on the one hand, and comprehensiveness without rigor, on the other). Third wave theorists are still relatively rare, though the work of a variety of intellectuals and scholars is relevant to third wave research agendas.

The principles and standards of the National Council for Excellence in Critical Thinking (NCECT) illustrate well an attempt to answer the need created by the limitations of the first two waves of critical thinking theory and practice and therefore represents a third wave phenomenon. The research projects based on these principles and standards are comprehensive in nature, going much beyond a narrow view of logic and critical thinking.

Still, the NCECT has found it difficult to "recruit" scholars and researchers with the breadth of background which third wave agendas call for. There are at present few scholars willing to internalize both first and second wave insights. The field is therefore at a crucial juncture, for if comprehensiveness and rigor are not combined in the work of the field, it is likely to split even further into a narrow technical field on the one hand, and a hodge-podge on the other. However, it is too early to tell whether and to what extent the need for both comprehensiveness and rigor will be answered by the full development of NCECT research agendas.

Unfortunately, third wave agendas cannot go forward without a general recognition of the importance of a deep and comprehensive theory that goes beyond the "narrowness" of most first wave research and the "superficiality" of much second wave research. It requires a willingness to think outside one's discipline or at least to think within one's discipline from the standpoint of a broader range of concerns. It requires, on the one hand, informal logicians who are willing not only to examine the problems posed by second wave theorists, but also to move to a broader conception of logic, one that recognizes that there is a logic to thinking within different disciplines, a logic to human emotions, a logic to human behavior, a logic, indeed, to every dimension of human life in which thinking is the driving force. On the other hand, it calls for those with second wave concerns to take seriously the insights of first wave research and not simply to grudgingly (and abstractly) admit some value to it.

In other words, while first wave researchers need to recognize the importance of broadening the sweep of their concerns, second wave researchers need to recognize the need to build on the theoretical rigor of the first wave, to internalize, not ignore, the insights of the first wave, and to build on them. Only out of a real marriage of first and second wave concerns, only by a deep integration of insights, can the third wave fully develop. Those who would contribute significantly to the field of critical thinking research need to internalize the strengths of the first two waves.

The First Wave of Critical Thinking Research & Practice
1970-1982
Formal & Informal Logic Courses

First Wave Research Concerns:

- the design of individual courses in critical thinking or informal logic
- the critique of formal logic as a tool for the analysis and assessment of "real world" reasoning and argumentation
- the development of theories of fallacies in thought
- the development of theories of informal logic, reasoning, persuasion, rhetoric, and argumentation, etc.
- the exploration of philosophical issues raised by theories developed to account for informal logic, reasoning, and argumentation

In the first wave of critical thinking practice, the dominant paradigm came from philosophy and logic and the dominant educational manifestation was a formal or informal logic course. The idea was to establish a basic course in critical thinking which would provide entering freshmen with the foundational intellectual skills they need to be successful in college work. Almost from the beginning, however, there was a contradiction between the concerns and ideals that gave rise to the theory and practice and actual classroom practice. The ideals were broad and ambitious. The practice was narrow and of limited success. For example, the State College and University System of California defined the goals of the critical thinking graduation requirement as follows:

Instruction in critical thinking is to be designed to achieve an understanding of the relationship of language to logic, which should lead to the ability to analyze, criticize, and advocate ideas, to reason inductively and deductively, and to reach factual or judgmental conclusions based on sound inferences drawn from unambiguous statements of knowledge or belief. The minimal competence to be expected at the successful conclusion of instruction in critical thinking should be the ability to distinguish fact from judgment, belief from knowledge, and skills in elementary inductive and deductive processes, including an understanding of the formal and informal fallacies of language and thought.

On the one hand, we have a global comprehensive goal and on the other hand a fairly narrow and specialized way to meet that goal. Students do not in my experience achieve "an understanding of the relationship of language to logic" leading to "the ability to analyze, criticize, and advocate ideas"; they do not develop "the ability to distinguish fact from judgment" or "belief from

knowledge" simply because they have been drilled in "elementary inductive and deductive processes" nor because they have been exposed to the theory of formal and informal fallacies.

The misfit between goal and means is obvious to anyone who takes the goals in the above paragraph seriously. One three-unit course in critical thinking can at best open the door to the beginning of critical thinking, provide an opening framework. It cannot result in the students having deep notions like "an understanding of the relationship of language to logic" or sweeping abilities like "the ability to analyze, criticize, and advocate ideas."

No one or two isolated courses can change the basic habits of thought of anyone. Furthermore, as a practical matter, many of the courses established to accomplish the objective fell far short of the best design. Often, for example, a course in formal logic was allowed to qualify as a course in critical thinking even though such courses generally are confined to teaching only the mechanical manipulation of symbols in accord with rules for such manipulation, a practice that does not result in changing habits of thought. Students who have taken such courses demonstrate little sense of how to transfer their "manipulative" abilities (with the symbols of formal logic) into practical tools in everyday thought.

Substituting informal logic courses for formal ones was one of the earliest shifts in emphasis as more and more instructors recognized that the formal logic approach had little transfer effect. The emphasis in the informal logic approach to the improvement of thinking was a giant step in the right direction. In place of highly abstract and contrived "arguments" in symbolic form, the students had to read and analyze arguments that came from editorials and everyday speech and debate.

Unfortunately, the informal logic textbooks were often rich in vocabulary and sophisticated distinctions but, unfortunately, poor in fostering deep internalization. The distinctions were generally well thought out, but there were far too many distinctions for a one semester course, and furthermore, they were typically too narrow in their scope. Consequently, most students were rushed on to new distinctions and concepts before they had internalized the "old" ones. There was little emphasis on the construction—as against the critique—of reasoning. There was little done with the essential dispositions and values underlying critical thinking. The goals remained broad and profound; the means narrow and unrealistic.

Furthermore, the problem of transfer remained; it was still not clear to students how to transfer their analysis of bits and pieces of argumentation into learning what they were being taught in other courses, namely, sociology, psychology, biology, etc. So most students, once their critical thinking courses were finished, reverted to their established lower-order, survival skills—principally, rote memorization and cramming—to get by.

The problem of most first wave work is/both theoretical and pedagogical. Theoretically, little if anything was done to work out a comprehensive theory of "logic" sufficient to make sense of the logic of biology, the logic of sociology, the logic of anthropology, geography, literature, the arts, etc. The concept of logic implicit in informal logic research is too narrow to provide the basis for transfer of critical thinking from, in fact, informal logic courses (no matter how well designed) to

the broader curriculum, nor into the complex problems of everyday life and thought (except in a narrow range of such problems).

Pedagogically, little was done to work out the practical problems of restructuring instruction and learning overall. After all, how is one to teach anyone anything in such a way as to foster their taking command of their thinking, so that they develop not only intellectual skills but the basic dispositions and values that underlie critical thinking? How are academic subjects to be taught such that students leave school with the intellectual skills necessary to adapt to incessant and accelerating change and complexity? How are we to teach so that students explicitly recognize that the work of the future is the work of the mind, intellectual work that demands global skills of reasoning and intellectual self-discipline? These questions must be addressed.

The Second Wave of Critical Thinking Research & Practice
1980-1993
Critical Thinking Across the Curriculum Across the Grades

Second Wave Research Concerns:

- the development of a model for teaching critical thinking at some educational level or within some particular subject
- the development of a theory of critical thinking within a given domain or subject
- exploration of the relation of critical thinking to emotion
- exploration of the relation of critical thinking to the media
- exploration of the relation of critical thinking to problem-solving
- exploration of the relation of critical thinking to creative thinking
- exploration of the relation of critical thinking to sound business organization and management
- exploration of the relation of critical thinking to parenting
- exploration of the relation of critical thinking to political and ideological agendas
- research in cognitive psychology

The second wave of critical thinking research and practice began when increasing numbers of educators and administrators began to recognize that one course in critical thinking at the college level does not a critical thinker make. The problem for these reformers was transformed from "How should one design an isolated critical thinking course for college students?" to "How can critical thinking be integrated into instruction across all subjects and all grade levels?" From "What is informal logic, reasoning, and argumentation?" to "What is the role of emotion—or intuition or culture or gender or problem solving or creative thinking or political and ideological positioning—in thinking?"

Unfortunately, many second wave reformers were not at all clear on how to integrate critical thinking into instruction across the curriculum or across grade levels. The concept of informal logic which had been developed in and for critical thinking and informal logic courses did not translate readily into the "logic" of the disciplines, let alone into the "logic" of everyday life. For though informal logicians were often clear and rigorous in the development of theory, the theory they developed was narrowly conceived. In other words, most informal logicians have never

seriously considered the challenge of developing a theory of critical thinking adequate for the teaching of all subjects across all grade levels.

Informal logic was not conceived as applicable to virtually all human contexts. The theory of the informal logician remained the theory of a specialist thinking and writing for other specialists (about a subject of relatively narrow scope). It was not the thinking of a comprehensive educational thinker writing for educational reformers. It was not the thinking of a comprehensive mind considering broad and comprehensive problems.

From a third wave perspective, an adequate account of informal logic and critical thinking must shed significant light on the logic of everyday thinking as well as on the logic of the disciplines (if it is to attract the attention of educational reformers and those concerned with the application of critical thinking to everyday life). Problems in business, parenting, everyday relationships, politics, civics, and such, cannot easily be addressed within the framework of current theories of logic. And since critical thinking makes sense whenever and wherever thinking might go awry, the logic of critical thinking must be broad and encompassing, not narrow and specialized.

Unfortunately, second wave reformers did not set out to broaden the basis of informal logic and reasoning. Rather, some second wave reformers mistakenly rejected "logic" rather than worked to expand it. To some, logic constrained thinking, limited creativity, discounted intuition. Others seemed simply to ignore logic and focused instead on any of the various "discoveries" and popular theories of thinking. In fact, the field of "thinking" became, and still is, a veritable hodge-podge, some work bordering on charlatanism. Quick-fixes for teaching and understanding thinking became commonplace. Quick-fixes ruled, and still rule, reform efforts at all educational levels.

Otherwise respectable educational organizations sponsored approaches to thinking that were simplistic and glitzy. Big money began to move into the field, since there was much money to be made by quick-fix programs that implied that thinking could be quickly and painlessly upgraded by educators, even by those who had never themselves studied thinking and thought poorly themselves. Instant success was promised.

The phenomena of pseudo-critical thinking became common. States set up new testing strategies that were claimed to be higher order. California mounted a very expensive new testing system in reading and writing which was touted to be focused on critical thinking—when it in fact was simply subjective and poorly designed. The result was a political battle between the "liberals" who liked the test and "conservatives" who thought it advanced a liberal agenda. Eventually the governor vetoed the test.

Other second wave researchers—principally cognitive psychologists— have focused concern on the manner in which experts and novices think. They have developed various theories of "thinking" and "intelligence," however, this research and these theories often lack a philosophical foundation, regularly ignore the problem of the intellectual assessment of thinking, and, like first wave informal logic research, lack a clear connection to the comprehensive problem of teaching subject matter in a variety of fields. The "practical" suggestions developed

were more often like a bag of tricks than a coherent pedagogy. The problem of long-term infusion was not significantly addressed.

Though second wave did not explicitly call for an abandonment of "logic" and additional attention was directed at explicating various subject areas in the light of some theory of critical thinking, there was little effort to marry the insights of the first wave with the needs of the second.

Little was done, for example, to explicate the logic of history, the logic of math, bio-logic, socio-logic, psycho-logic, the logic implicit in disciplined ways of thinking. After all, what does it mean to think historically, to think geographically, to think mathematically, to think philosophically, to think aesthetically, etc.? These are pressing second wave questions. However, since most subject matter specialists have not studied informal or formal logic, they are not well-positioned to integrate insights from logic into their concept of their field.

In short, the variety of attempts to reconstruct (with little background in informal logic or theory of critical thinking) the role of critical thinking within a domain, has tended to result in disjointed and sometimes superficial results. The upshot is often a hodge-podge of ideas, often superficial, usually incomplete, and in some cases, arbitrary. The phenomenon of instant-expert in critical thinking becomes commonplace.

Those who decide to write an article on critical thinking become in their minds an expert overnight. Programs are rushed into press to capitalize on the emerging market for critical thinking materials.

The Third Wave of Critical Thinking Research & Practice
1990-Present :
Depth & Comprehensiveness in Theory & Practice

Third Wave Research Concerns:

- integrating the insights of first and second wave research
- developing a theory of critical thinking that is rigorous and comprehensive
- explicating intellectual standards that have general application both within and beyond academic environments
- accounting for the appropriate role of emotion and values in thinking
- understanding the leading role of thinking in the shaping of emotion and behavior
- integrating the empirical work of cognitive psychology into critical thinking theory
- establishing common denominator principles and standards within the field of critical thinking research and practice
- developing effective assessment tools
- identifying and critiquing pseudo-critical thinking models and programs

The third wave of critical thinking research and practice is only just now beginning to emerge. As yet there are few who see clearly the enormity of the task which the field faces. The success

of the third wave can be achieved only with a growing recognition of the strengths and weaknesses of the first two waves. First wave research needs to bring its rigor and depth into a broader complex of concerns. Second wave research needs to integrate rigor and depth into its comprehensiveness. Theory of teaching and learning (based on theory of thinking, emotion, and action) need to be carefully integrated.

The field needs a comprehensive theory of thinking and critical thinking. It needs a clear set of intellectual standards. It needs an integrated set of dispositions. It needs a comprehensive concept of logic which accommodates the role of emotion, intuition, imagination, and values in thinking. It needs to make clear the leading role of thinking in the shaping of human feelings and behavior. It needs to provide a framework into which can be set integrated theories of teaching and learning in the widest variety of human contexts. It must provide both for the universal elements in reasoning and those which are domain and context-specific.