

4

Issues over the Nature, Purpose, and Epistemology of Rhetorical Invention in the Twentieth Century

In the first part of the twentieth century, the dormant state of invention and rhetoric as a whole was manifest in English Studies where literature had eclipsed rhetoric and in the academy at large where philosophy monopolized invention. With rhetoric's loss of life and respect came the loss of power. By the mid-twentieth century, philosophy held sway over the study of reasoning, restricting it to formal logic, even symbolic logic. The study of rhetoric became largely the province of the field of Communication. English Studies held sovereignty over the teaching of written discourse but studied only literary discourse. Within this rhetorical void in English Studies, interest in invention began to emerge in the 1960s. This chapter chronicles that reemergence.

The first part of the chapter will outline some interdisciplinary intellectual developments in the first half of the twentieth century that created a context for the renewal of interest in invention. The chapter will then feature statements of members of English departments who began calling attention to the lack of invention within their departments, demonstrating the vacuum that existed before invention's renewal. That will be followed by early calls for the reinstatement of invention in composition theory and practice. These voices helped to open a path and establish a need for scholarship and pedagogy for invention. The main thrust of the chapter will be to examine inventional

work in Rhetoric and Composition, Communication, and other fields since the mid-twentieth century.

Interdisciplinary Contexts for the Revival of Invention

During the first six decades of the twentieth century, a wide array of interdisciplinary scholarship helped to construct an intellectual context for the revival of rhetorical invention. In different fields, scholars began challenging Cartesian epistemology, formal logic, notions of certainty, discourse as its own end, and decontextualized views of language and interpretation. While I cannot undertake here an extensive discussion of this work, I will point to some of the theorists whose work influenced early developments in rhetorical invention.

Philosophical Studies

Two important theorists of this era whom Daniel Fogarty cites in his influential book, *Roots for a New Rhetoric*, were Kenneth Burke and I.A. Richards. In the 1940s and 1950s, Kenneth Burke advanced a number of seminal concepts and theories that impacted work on invention, including *dramatism* (language as symbolic action), the view that language is primarily a mode of action rather than a mode of knowledge. In “The Five Master Terms,” he proposed the Pentad as a strategy for interpreting the motivation for action in texts. The Pentad had five interpretive terms: *Act* (what was the action?), *Agency* (by what means did it occur?), *Agent* (by whom was it done?), *Scene* (where did it occur?) and *Purpose* (why did it occur?). Burke also stressed the *ratios* between terms, that is, interpreting one term in the light of the other: for example, the ennobling of a person by an act of heroism (Agent-Act) or the impact of poverty on the use of riots as a means of improvement (Scene-Agency). He later added a sixth term, *Attitude* (one’s general view of life and its bearing on action) as another central factor explaining motivation. In contrast to new criticism’s analytic method, the Pentad was intended to help readers analyze motives and symbolic acts in their fullest contexts. Although Burke intended the Pentad for interpretive purposes, he later acknowledged its heuristic (generative) viability and stressed the importance of using the Pentad in its *circumference*, the overall scene in which human action is discussed (e.g., the rhetorical situation or cultural context) (“Questions”). Burke’s definition of rhetoric as “the use of language as a symbolic

means of inducing cooperation in beings that by nature respond to symbols" (*A Rhetoric of Motives* 43) posited that one of the purposes of language is social cohesion. He also stressed the terms *consubstantiality* or *identification*, by which the rhetor articulates shared experience, imagery, and values.

In the 1930s, I.A. Richards in *The Philosophy of Rhetoric* introduced a conception of rhetoric as the study of verbal understanding and misunderstanding and its remedies, building on a contextual basis of meaning. He argued that language is the means of understanding thought, both forming and formative, and he advanced other perspectives that later would inform the work of some composition theorists, including the notions of ambiguity as the highest of thought, of messages in context, and of the power of metaphor to improve understanding and language use. He also discussed the construction of meaning as interpretive choices guided by purposes.

In 1956, Bernard Lonergan, in *Insight: A Study of Human Understanding*, defined the process of inquiry as a quest for the discovery of insight, as an act of grasping the unity of data, of finding a point of significance, and of reaching new understanding. He argued that insight comes unexpectedly as a release to the tension of inquiry and is a function of inner conditions (3-6). Those inner conditions include a heuristic structure: "Prior to the understanding that issues in answers, there are the questions that anticipate answers; [. . .] A heuristic notion, then, is the notion of an unknown content and is determined by anticipating the type of act through which the unknown would become known" (392). This study, along with G. Wallas's *The Art of Thought*, informed some inventional theories that framed writing as a process of inquiry.

In 1958, Michael Polanyi, in *Personal Knowledge* and later in *The Tacit Dimension*, discussed tacit and focal knowledge in the act of inquiry and developed an epistemology of personal knowledge. Maintaining that tacit knowledge undergirds all explicit knowledge, he argued that scientific communities have beliefs and values to which the inquirer must appeal. He also discussed the importance of heuristic action among members of an interpretive community.

In 1965, Maurice Natanson and Henry Johnstone published a collection of essays, *Philosophy, Rhetoric, and Argumentation*, in which a number of contributors characterized invention as the source of rhetoric's vitality. Hoyt Hudson asserted that the loss of invention in rheto-

ric occurred in any period when “subject-matter was conventionalized, [. . .] the tendency to depend upon tradition or convention for material and devote oneself wholly to style in writing and delivery in speaking” (30). In the same volume Donald Bryant lamented that invention had been removed from its rightful province and placed in the realm of the sciences. He went on to call rhetoric “the rationale of informative and suatory discourse” (“Rhetoric” 36), operating chiefly in the areas of the contingent, whose aim is maximum probability (39). In another essay in this collection, Albert Duhamel offered a view of the shifting purposes of invention throughout history. He contended that in the medieval period systems of invention for the discovery of arguments were transferred to medieval logics, “where they appear as means of discovering the sense in which terms are to be understood” (“Function” 81). He noted that in this period they sought to “express more effectively the truth already possessed” (81). He further explained that invention disappears in a period which is “convinced that truth is safely within its grasp” or not worth worrying about (82).

In 1969, Stephen Toulmin, in the *Uses of Argument*, challenged the dominance of formal logic, questioning the validity of formal or analytic reasoning and theorizing informal or substantive reasoning. He argued that the two could only be distinguished by looking at the nature of the problem under investigation and the manner in which the warrants were established, insisting that validity rests in the backing of the warrants (135-43). Claiming that analytic arguments were either quite rare or often mere tautologies, he maintained that informal or substantive arguments account for the most frequently used kinds of reasoning, which occur in real languages and situations of probability where the backing for the warrants is field dependent. Although he did not refer to rhetoric, Toulmin was in fact talking about rhetorical reasoning, a fact that was not lost on those interested in rhetoric.

Also in 1969, Chaim Perelman and Madame Olbrechts-Tyteca published *The New Rhetoric*, the result of a study conducted to investigate the kinds of reasoning that were done in fields like law. Motivated by a gap in their education that had introduced them only to analytic and scientific reasoning, they attempted to catalog, define, and illustrate the kinds of arguments used in areas of the probable, grouping them as arguments in the form of liaisons (quasi-logical arguments, arguments based on the structure of the real, and arguments to establish the structure of the real) and arguments in the form of

dissociation. Their enterprise was similar to Aristotle's in that it catalogued prominent arguments of the day, illustrating them with current examples. In other words, they were interested in rhetorical invention. In a later shorter version of this work, *The Realm of Rhetoric*, Perelman castigated Ramus for eliminating the distinction between analytic and dialectical reasoning: "It is in relation to this distinction that we can see how the innovation introduced by Peter Ramus turned out to be an error that was fatal for rhetoric" (3), depriving rhetoric of its two essential elements, invention and disposition. Ramus thought to cram the teaching and theorizing of all types of knowledge into one—analytic knowledge or logic. This over-simplification deprived rhetoric of its own kind of knowledge, probable audience-based knowledge, and made it dependent on logic for its inventional functions. Max Loreau stated at the time that the objective of Perelman and Olbrechts-Tyteca's work was "to produce an instrument capable of achieving in the realm of values results exactly analogous to those pursued by analogical reasoning in the domain of the exact sciences" (456). Henry Johnstone characterized Perelman's work as "exploring the principles and important ramifications of the art of allaying philosophical doubts and hesitations" ("New Theory" 127). Although Perelman and Olbrechts-Tyteca's as well as Toulmin's theories fell outside the parameters of philosophy's disciplinary power structure, their work influenced developing theories of rhetorical invention.

In "The Methods of Rhetoric and Philosophy," Richard McKeon, speaking of the historical functions of rhetoric, said that invention was "the art of discovering new arguments and uncovering new things by argument," while judgment was "the art of testing arguments, proving conclusions, and verifying statements" (*Rhetoric* 59). He stated: "method is needed in invention to define the question and to order the data pertinent to it" (59).

The above philosophical works called attention to probable reasoning, inquiry in terms of field-dependent and audience-based argument, the importance of values and beliefs in knowledge construction, and language as motivated action. Because these concepts were essentially rhetorical, they stimulated people in English who were beginning to study invention.

Semiotics and Tagmemic Linguistics

In the 1930s and 1940s, Charles Morris and others, drawing from the work of Charles Sanders Peirce, developed theories of semiotics (signs). Some of their tenets included the idea that signs cannot contain definite meanings; that there are three kinds of signs: the icon (e.g., photograph), the index (depending on associate relationships), and the symbol (depending on social and cultural conventions); and that signs have three parts—the sign, the object, and the interpretant. Peirce had also developed a new trivium: Speculative Grammar, Critical Logic, and Speculative Rhetoric. Charles Morris spoke of the aims of discourse as informative, valuative, incitive, and systematic. Semiotics formed a basis for the work of James Kinneavy.

In 1964, Kenneth Pike developed tagmemic linguistics, which posited that discourse like language is fundamental to human rationality and that sentences and other aspects of discourse had to be understood in the larger context of purposes, audiences, and cultural differences. Pike claimed that certain characteristics of rationality underlay human experience: 1) units had distinctive features, range of variation, and distribution in a class, functioning in a temporal sequence or spatial array, and distributed in a dimensional system; 2) experience could be viewed from three complementary perspectives: as a particle, wave, and field; and 3) language was social behavior in a universe of discourse, with change occurring over a bridge of shared features. This theory demanded attention to the situatedness of language and the importance of the wholeness of a discourse event unlike other sentence-based linguistic theories of the time. Because tagmemic theory focused on entire discourses in their contexts and on epistemological processes of discourse production, some scholars found tagmemics of interest in the development of a modern theory of invention.

Psychological Studies

In *Thought and Language*, Russian psychologist Lev Vygotsky examined how the mind develops within a community and culture. He also posited that the ontogenetic development of children moves from the social to the individual, to inner speech as social, and that writing makes possible the higher mental functions. Based on his study of higher mental functions, he differentiated spontaneous concepts that children acquire naturally from nonspontaneous concepts learned in

school. These notions would later impact theories of social invention and composition pedagogy.

In another strand of interdisciplinary research in the 1960s, the study of heuristics, psychologists and others began to investigate a new kind of thinking that was neither formal logic nor scientific induction. As Chapter 2 indicates, they considered heuristic thinking as more flexible than logic and more effective than waiting for the muse. Heuristic strategies guided conscious activity but also entailed intuition, prompting investigators to take multiple perspectives on their questions in order to break through their usual ways of thinking and to stimulate new insights and meanings. These procedures could be taught, adapted, and used in many situations. (Lauer, "Invention," "Heuristics"). G. Polya claimed that no artist could create without a good supply of heuristic methods. These features of heuristic thinking attracted the attention of some scholars in the developing field of Rhetoric and Composition who were trying to formulate inventional strategies for the creative process of writing.

Other works that had impact on studies of invention in the creative process include Jerome Bruner's *The Process of Education* and *On Knowing: Essays for the Left Hand*; Leon Festinger's *A Theory of Cognitive Dissonance*; Arthur Koestler's *The Act of Creation*; Sidney Parnes's and Eugene Brunelle's work on creativity; William Gordon's *Synectics*; and George Miller, Eugene Gilanter, and Karl Pribram's *Plans and the Structure of Human Behavior*. Also of interest was research on cognitive and ethical development and different ways of knowing (e.g., Jean Piaget, *The Psychology of Intelligence*; William Perry, *Forms of Intellectual and Ethical Development in the College Years: A Scheme*; and Howard Gardner, *Frames of Mind*).

Literacy Studies

The development of literacy and its contrasts with orality also had an impact on composition scholars' studies of the nature of reasoning processes and on writing pedagogy. Both Eric Havelock and Fr. Walter Ong wrote extensively on this subject. In *Preface to Plato*, Havelock argued for the cognitive effects of literacy, characterizing the Greek preliterate society as transferring knowledge and cultural values uncritically through a mimetic spell in contrast to the literate period which fostered questioning, critical thinking, self-consciousness, and abstract and syllogistic thought. In *The Presence of the Word*, Fr.

Ong addressed the impact of alphabetic writing systems on thought, maintaining that writing and print became gradually interiorized into human consciousness, changing ways of thinking. He called contemporary culture a period of secondary electronic orality in which traces of primary orality and literacy mingle with secondary orality. He also discussed two kinds of commonplaces used in rhetoric: cumulative commonplaces (e.g., set phrases and analytic commonplaces like the topics). (See also the work of Marshall McLuhan and Albert B. Lord.) Anthropological research on literacy also stimulated some inventional theorists. Jack Goody and Ian Watt examined the impact of literacy on modes of thought, work that would be followed later by the studies of A. R. Luria, and Sylvia Scribner and Michael Cole. These studies examined intellectual processes across cultures, including perception, deduction, reasoning, and imagination.

By the 1960s, many ideas from these interdisciplinary studies were circulating: insights into the processes of inquiry, creativity, and heuristic thinking, new conceptions of rhetoric, testaments to the importance of invention, understandings of informal rhetorical reasoning, and the connections between the evolution of literacy and intellectual acts.

The State of Invention at Mid-Twentieth Century

At the time of these interdisciplinary developments, English departments had largely abandoned rhetoric as a discipline, keeping only its application—the teaching of composition. Within composition teaching, invention was neglected or trivialized (James Berlin, “Richard Whately,” “Transformation,” and *Writing Instruction*; Richard Young, “Arts, Crafts”; and Sharon Crowley, “Invention” and *Methodical Memory*), contributing to the loss of prestige and the power of composition instructors (Susan Miller; Sue Ellen Holbrook). In 1950, James Brown reported in the *Journal of Higher Education* that the most common types of traditional Freshman English (the term at that time) were “the composition course,” which was predominantly traditional grammar, and the “composition-readings course,” with no inventional component. In 1957, in *College Composition and Communication*, Henry Thoma described the major influences on composition textbooks of that time—General Semantics, linguistics, and communications—with no reference to invention. In 1959 in *College Composition and*

Communication, Harold Dean's ten-year perspective on the communication course gave no treatment of invention. Charles Ferguson's book, *Say it With Words*, confined preparation for writing to the unconscious or the interview. In 1960, in *College Composition and Communication*, Charles Hoffman traced the fluctuating influences in Freshman English from an early concern with Western Masterpieces, through the Communications phase in the 1940s, to the use of the reader and masterpieces of prose in the 1950s. In 1963, Albert Kitzhaber published his study of the status of Freshman English, reporting that the content of the standard Freshman English course was expository reading and writing or the study of literature. In 1965, Robert Gorrell provided a similar view of Freshman English at the time, representing the same emphases: usage, general semantics, logic, language study, forms of discourse, and literature. In 1967, Janice Lauer's search for invention in 57 composition textbooks showed that most texts incorporated some version of the classical topics (e.g., definition, cause and effect) but they were presented as discrete modes of organization or development not as a set of inventional strategies. A few texts helped students to analyze their audience. No texts were self-conscious about the epistemological function of their directives. No strategies were offered to initiate inquiry (131-33). In such a climate, there is small wonder that in English departments composition instruction was considered an onerous service with little stature or power, while literary studies enjoyed the prestige and rewards of the academy. As Elbert Harrington, Richard Young, and others have said: the status and exclusion of invention reflected the status of rhetoric: no inquiry, no discipline.

Awakening Interest in Invention

In the late 1940s and 1950s, however, points of light signaled the reemergence of rhetorical invention. In 1949, Craig La Drière in "Rhetoric and 'Merely Verbal' Art" argued that rhetoric had its own kind of thinking, a rhetorical *dianoia* whose end was in the addressee (139). In that same year, Albert Duhamel wrote that "The content of the idea 'rhetoric' [. . .] is dependent upon the epistemology, psychology, and metaphysics of the system in which it occurs" ("Function" 345). In 1953, Manuel Bilsky, McCrea Hazlett, Robert Streeter, and Richard Weaver in "Looking for an Argument," advocated a topical approach to college composition. Their course at the University of

Chicago aimed at discovering relevant and effective arguments by using the topics of genus or definition, consequence, likeness and difference, and testimony and authority.

In *Roots for a New Rhetoric*, Daniel Fogarty defined rhetoric as “ways of arriving at mutual understanding among people working toward patterns of cooperative action” (4). In particular he singled out the “thought-word-thing” relationship in Richards and the General Semanticists. Instead of rhetorical invention, he used terms like the “philosophy” of composition that he forecast would characterize the new rhetoric. Also in 1959, Fr. Walter Ong published *Ramus, Method, and the Decay of Dialogue*, in which he explained Ramus’s role in renouncing any possibility of invention within a speaker-auditor framework (288). See also John Brereton and Maureen Goggin for discussions of this period.

The 1960s marked a turning point for invention. Discussions of invention were woven with attempts to revive an interest in rhetoric within the academy and in particular within English Studies. At the 1961 Conference on College Composition and Communication, speakers on a panel entitled “Rhetoric—The Neglected Art” argued for the importance of rhetorical invention (Virginia Burke), while others spoke of rhetoric as an intellectual art whose core was invention. In 1962, Elbert Harrington published an important essay, “A Modern Approach to Invention,” in the *Quarterly Journal of Speech*, contending that: “Most teachers know that rhetoric has always lost life and respect to the degree that invention has not had a significant and meaningful role” (373). Two years later, Dudley Bailey in “A Plea for a Modern Set of Topoi” challenged composition instructors to develop a new rhetorical invention, claiming that: “The heart of rhetoric has always been ‘invention’ and disposition” (115-16). In 1965, Robert Gorrell reported on a seminar on rhetoric held the prior December, organized by the executive committee of the College Composition and Communication Conference. The members were Wayne Booth, Virginia Burke, Francis Christensen, Edward Corbett, Robert Gorrell, Albert Kitzhaber, Richard Ohmann, James Squire, Richard Young, and Karl Wallace. Gorrell recounted that they had lamented the state into which rhetoric had fallen, offering as one of the reasons that “invention had become largely a matter of assigning a book of readings, presumably to provoke thought or stimulate ideas for writing” (139).

Also in 1965, numerous publications and interdisciplinary meetings were devoted to rhetoric and invention. Gorrell noted that a “small but probably significant revival of interest in rhetoric is occurring” (“Freshman Composition” 33). In that same year in the *Quarterly Journal of Speech*, Edward Corbett summarized several roots for a new rhetoric: classical rhetoric, General Semantics, linguistics, Kenneth Burke, I.A. Richards, Jerome Bruner, B. F. Skinner, Kenneth Pike, and Marshall McLuhan. Richard Hughes, in a widely read article, “The Contemporaneity of Classical Rhetoric,” described rhetoric as “an art of moving an idea from embryo to reality [. . .] an art which rests not at the end of the intellectual process, but an art that lies within the process” (157). He defined invention as the “gradual evolution of a judgment out of disparate and embryonic evidence, the formulation of the realized judgment in the rhetor’s own mind, and the propagating of that realized judgment in whatever structures will lead to a duplication of his discovery in the mind of his audience” (158).

In 1966, Robert Dick maintained that the topics, first, were useful not only for developing a proposition but also in arriving at one, and, second, they were not “a procrustean bed to which the subject is fitted but rather a method of analysis originating in the ontological reality of the subject” (314). In 1968, Lloyd Bitzer’s “The Rhetorical Situation,” published in the first issue of *Philosophy and Rhetoric*, sparked a conversation on the rhetorical situation as the exigency to initiate rhetorical processes. This conversation continued with essays by Richard Vatz, Kathleen Jamieson, and Scott Consigny. At the 1968 Conference on College Composition and Communication, the Rhetoric Society of America was founded, an organization drawing together scholars in Communication, Philosophy, English, and Linguistics. This group, with its newsletter and regular meetings, helped to build a resurgence of rhetoric and a nucleus of people interested in restoring rhetoric to English Studies.

During the 1960s, three important collections of essays appeared, that included discussions of invention: *New Rhetorics*, edited by Martin Steinmann; *Teaching Freshman Composition*, edited by Gary Tate and Edward Corbett; and *Rhetoric: Theories of Application*, edited by Robert Gorrell. Steinmann included Richard Young and Alton Becker’s essay on tagmemic invention previously published in the *Harvard Educational Review*. Tate and Corbett included Robert Gorrell’s article on freshman composition. Gorrell reprinted Edward Corbett’s

“A Look at the Old Rhetoric,” which asserted that “one of the reasons why there has been no major breakthrough in the formulation of a new rhetoric is that we still have not plumbed the psychology of the composition process” (17). He seconded Dudley Bailey’s call for “a system of discovery that will be as sensible, as helpful, as productive as the common and special topics devised by the classical rhetoricians” (17).

All these works helped to pave a path for the development of new inventional theories for rhetoric.

Early Studies of Invention: Mid-1960s to Mid-1970s

The new theories of invention that appeared from the 1960s to the 1970s reflected diverse conceptions of the nature, purpose, and epistemology of invention that were described in Chapter 1. Some theories of invention dealt only with the exploration of subjects; others addressed the search for rational arguments to support theses. Very few treated the initiation of discourse. These theories also varied in their conceptions of the social nature of invention and the purposes for rhetorical invention, which included raising questions for inquiry, identifying points at issue, stimulating text production, generating subject matter for texts, constructing new knowledge, reaching insight, finding arguments for theses already held, interpreting texts, and investigating from different perspectives. These varying purposes often entailed different epistemologies: constructing new knowledge; locating or recalling known information, observations, experiences, and lines of reasoning; knowing oneself; leading to certainty or probability; reaching truth; or playing. This chapter showcases these points at issue among prominent inventional theories in Rhetoric and Composition and Communication from the 1960s to the present. As the discussion proceeds, most of these issues echo those in the account of rhetorical history in Chapter 3.

Rhetoric as Epistemic

A key influence on inventional research in the 1960s and early 1970s was the discussion of rhetoric as epistemic carried out largely in Communication Studies beginning in 1967 with Robert Scott’s “On Viewing Rhetoric as Epistemic.” Drawing on Stephen Toulmin’s distinction between analytic and substantive arguments, Scott argued for the possibility of rejecting “prior and enabling truth as the epis-

temological basis for rhetoric” (12) and instead proclaimed: “rhetoric may be viewed not as a matter of giving effectiveness to truth but of creating it” (13). He cited Douglas Ehninger and Wayne Brockriede’s descriptions of cooperative critical inquiry as asserting that truth is not prior or immutable but contingent, “a process of interaction at any given moment” (13). Rejecting the idea that one first knows the truth and then makes it effective through rhetoric, he invoked Gorgias and the sophistic *dissoi logoi* in his argument that in the face of uncertainty humans create situational truths that entail three ethical guidelines: toleration, will, and responsibility. In the following years, others such as Robert Carlton, Richard Cherwitz, Barry Brummett, Thomas Farrell, Richard Gregg, Richard Fulkerson, Charles Kneupper, and Michael Leff contributed to this conversation.

Work on probability also added to the expanding views of rhetoric’s epistemology. Charles Kneupper in “Rhetoric and Probability Theory” discussed three schools of probability theory.

1. Classical Theory which framed probability as a measure of rational expectation or belief, which entailed the principle of indifference: “two possibilities are equiprobable if and only if there is no ground for choosing between them” (292).
2. Frequency Theory was a relative probability empirically derived by “observing what actually occurs and counting” (293), that is, “the proportion of occurrences of any event compared to the total possible occurrences” (i.e., what happens) (293).
3. Logical Implication Theory was based on logical analysis, i.e., finding “a local connection between the evidence and the hypothesis or conclusion based upon it” (294).

Kneupper argued that Logical Theory had a broader range of application than classical and frequency theories and hence the greatest implications for rhetoric.

Wayne Booth’s 1973 *Modern Dogma and the Rhetoric of Assent* examined the modern propensity to polarize fact and “mere” opinion, thereby excluding probable claims supported by good reasons. Discussing the tensions between what is and what ought to be and between fact and value, he argued that language is “the medium in which selves grow, the social invention through which we make each other and the structures that are our world, the shared product of our efforts to cope with experience” (135). To Booth, “the supreme purpose of persuasion

[. . .] could not be to talk someone else into a preconceived view; rather it must be to engage in mutual inquiry or exploration.[. . .] The process of inquiry through discourse thus becomes more important than any possible conclusions” (137).

In the early 1970s, the Speech Communication Association’s National Developmental Project on Rhetoric published *The Prospect of Rhetoric*, which reported on the Wingspread Conference (1970) and the National Conference on Rhetoric (1970). In this volume, Richard McKeon’s essay, “The Uses of Rhetoric in a Technological Age: Architectonic Productive Arts” called on rhetoric to help in the “resolution of new problems and architectonically in the formation of new inclusive communities” (45). A new rhetoric should be “constructed as a productive art and schematized as an architectonic art” (45). He contended that the topics had been “degraded from instruments for discovery of new ideas or arguments to repertoires for repetition of old devices and adages” (55). Among several recommendations, he suggested that the new rhetoric should clarify the relationship between judgment and invention. The published conference discussion cited three inventional perspectives: the formal, conceptual, and analytic. In a review of the volume, W. Ross Winterowd, while largely agreeing with McKeon, criticized the conference for failing to go outside its boundaries to other fields in order to create a new rhetoric, contending that new theories of invention will develop from fields like psychology, philosophy, and linguistics (“Review” 58).

New Invention Theories in Rhetoric and Composition

Responding to these discussions of rhetorical invention from the mid-1960s to the mid-1970s, a number of scholars in the emerging field of Rhetoric and Composition within English Studies developed new theories of invention, generating research and pedagogies. The accounts of these theories will include an examination of their treatments of the nature, purpose, and epistemology of invention as well as their social nature.

Prewriting. In 1964, Gordon Rohman and Albert Wlecke published a report on an experiment at Michigan State University: their research launched the term “prewriting,” which they called the “initial and crucial stage of the writing process” (12). They argued against “the rhetoric of the finished word” and advanced the notion of prewriting as the “stage of discovery in the writing process when a person trans-

forms a 'subject' into his own categories" (13). They further described prewriting as the discovery of a personal context, of self-actualization through writing. Although later writers would use the term *prewriting* to refer to internal mental processes, the three inventional strategies that Rohman and Wlecke suggested entailed writing: keeping a journal, meditating as a puzzle form, and creating analogies that led to patterns—all discursive ways of helping students escape thinking in clichés and assimilate their subjects to themselves. In 1969, Rohman's essay, "The Workshop Journal," described the journal as a system of collection (capturing ideas on the fly from every-day experience) and recollection (using these ideas so that they have the freedom to move about and form new associations)—a kind of journal that recorded things to which "writers happen," not things that happen to them. The journal was not meant to initiate a discrete piece of writing but was rather a long-range strategy to help students search for patterns or anomalies that puzzled them. The meditation and analogy were proposed to encourage students to invest themselves in their subjects and to stimulate ideas and organizational patterns. This study's emphasis on using writing in a way other than to create a finished paper led to interest both in invention and the composing process. Rohman had previously explained this emphasis by pointing to a:

fundamental misconception which undermines so many of our best efforts in teaching writing: If we train students how to recognize an example of good prose, ("the rhetoric of the finished work") we have given them a basis on which to build their own writing abilities. All we have done, in fact, is to give them standards by which to judge the goodness or badness of their finished effort. *We haven't really taught them how to make that effort.* ("Pre-Writing" 106)

The notion of prewriting informed textbooks like Donald Stewart's *The Authentic Voice* and suggested new composition classroom practices.

Classical Invention. In 1965, Edward Corbett's *Classical Rhetoric for the Modern Student* devoted a chapter to the discovery of arguments, including 1) the classical strategy of *status* with three questions students could ask to find a thesis: whether it was a fact, definition, or quality; 2) selections of common and special topics that could be used to find

arguments and subject matter; and 3) discussions of the rational, ethical, and emotional appeals to develop a paper. Corbett presented *status* as a strategy for formulating a thesis rather than helping students pose a question for investigation or to identify a point at issue for resolution. His list of common topics and appeals, selected from different periods of classical rhetoric, was designed to help students find support for a thesis already in hand, not to create new knowledge.

Tagmemic Invention. Also in 1965, Richard Young and Alton Becker published their first account of the developing theory of tagmemic rhetoric, foregrounding new inventional strategies that stressed imaginative discovery. They called their exploratory strategy an *epistemological heuristic* based on how we come to know something. Contrasting their heuristic with Aristotle's topics, which they viewed as a taxonomy of arguments already known, they offered a heuristic to help writers go beyond the known. In 1970, Young, Becker, and Kenneth Pike elaborated and expanded this theory in *Rhetoric: Discovery and Change*, based largely on maxims from tagmemic linguistics. Its epistemology emphasized the active role of the observer in discovering pattern and meaning, as well as the importance of complementary perspectives in investigating a subject. The text offered a strategy to help writers initiate inquiry with puzzlements and by framing questions. To guide exploration, they developed a heuristic procedure that they defined as a series of questions or operations to guide inquiry in order to retrieve relevant information, draw attention to missing information, and prepare for intuition. Open-ended and recursive, the heuristic guide was designed to help writers explore their subjects from multiple perspectives (particle, wave, and field) and investigate its contrastive features, range of variation, and distribution. The purpose of tagmemic invention was to assist writers in reaching new understanding and insights. This modern conception of invention, drawing as it did on studies of the process of inquiry and on a tagmemic theory, stressed the importance of invention in probing local cultural differences, the need for context in knowledge construction, and the role of cognitive dissonance as a major catalyst for genuine inquiry. In the 1960s and 1970s, the theory stimulated further research on invention and later spawned variations of the tagmemic exploratory guide.

Research on Invention

In addition to the new specific inventional theories discussed above, scholars also conducted studies of invention itself. In 1967, Janice Lauer, in “Invention in Contemporary Rhetoric,” documented the state of invention in English Studies in the mid 1960s. Because new studies of heuristic thinking defined it as more flexible and open-ended than logic and as a guide to creative acts and complex arts, she maintained that heuristics had potential for characterizing new theories of invention. She described a number of these theories, critiquing them with criteria gleaned from a broad range of literature on heuristics: theories based on Aristotle’s rhetoric (e.g., Corbett, Hughes, Brockriede, Black, Dearin, and Weaver); Overstreet’s behaviorism; Kenneth Burke’s dramatism; I. A. Richards’s work; General Semantics; tagmemic rhetoric; Rohman’s prewriting; the Amherst Experiment; Reid’s spectrum model; and Braddock’s issues approach. Finally she surveyed composition textbooks, searching for their inventional material. In 1972, Lauer’s bibliographic essay on heuristics and composition was followed by a dialogue with Ann Berthoff, who disagreed with Lauer’s recommendation that composition theorists use work in psychology to develop new understandings of invention. Their exchange focused on several issues: 1) the introduction of material from another field into English Studies; 2) the humanities/science divide; 3) the explicit theorizing of invention, drawing on interdisciplinary sources; 4) the conception of invention as strategy or art. This last concern over teaching an *art* of invention had been long debated in rhetorical history, as Chapter 3 indicated. The contemporary debates over this issue will be taken up in dealing with inventional pedagogy.

In 1971, Janet Emig’s study of the composing processes of twelfth graders made an important contribution to inventional theory. Her research described students’ stimuli for composing, prewriting, and planning, which included jottings, lists, and topic outlines. She defined *prewriting* as “that part of the composing process that extends from the time a writer begins to perceive selectively certain features of his inner and/or outer environment with a view to writing about them—usually at the instigation of a stimulus—to the time when he first puts words or phrases on paper elucidating that perception” (39). She defined *planning* as “any oral and written establishment of elements and parameters before or during a discursive formulation” (*Composing Processes* 39). For a field that had taught writing as the

production of a finished essay, her study underscored the importance of a process of writing and analyzed a range of inventional acts. Without recognition of a writing process, discussions of invention and their relationship to the classroom were moot. In 1977, Emig argued that writing itself is inventional, a unique mode of learning, because it is active, engaged, personal, self-rhythmic, enactive, iconic, and symbolic, structuring the web of meaning, differing from inner speech, and signaling the center of conceptual relations. In short, she maintained that writing is epigenetic, a record of the journey from jottings and notes to full discursive formation (“Writing”). Emig’s study of the composing processes of twelfth graders was followed by several studies of prewriting (e.g., C. Stallard, Sondra Perl, and Sharon Pianko, who examined the time devoted to prewriting, the ways students selected their topics, and how they associated ideas with their subject).

During this decade, there were also meta-theoretical discussions, categorizing and evaluating sets of topics. In 1973, W. Ross Winterowd’s “Topics’ and Levels in the Composing Process” positioned inventional guides into two categories: topics that were a closed or finite set and topics that were open, to which more could be added. He maintained that Burke’s Pentad and the tagmemic guide were finite sets that encompassed all possible perspectives, while the classical topics were an open set. In 1967, Lauer proposed two criteria for evaluating heuristic procedures: whether they helped writers probe all aspects of the rhetorical situation (writer, audience, and situation), and whether they specified a clear set of operations in a direction of inquiry. A decade later, in “Toward a Metatheory of Heuristic Procedures,” she posed three criteria: whether they were transferable and portable (able to be used in many situations); whether there was a flexible order to the questions or procedures, and whether they were highly generative, capable of prompting many and diverse ideas and perspectives.

Other theorists in the 1970s foregrounded nonlogical acts and the imagination as central to invention. In 1972, in both “Response to Janice Lauer: Counterstatement” and “From Problem-Solving to a Theory of the Imagination,” Ann Berthoff spoke of the imagination as the legacy of the Romantic Movement, of the form-creating powers of the secondary imagination, and of the uses of chaos. In 1974, James Miller argued for the importance of the non-conscious and non-rational in inventional activities. In 1975, Frank D’Angelo’s *A Conceptual Theory of Rhetoric* stressed structure in thinking and considered the

genesis of discourse to be an intuitive grasp of the end, of the gestalt or the whole. He described the conceptual patterns of extended discourse as topical, symbols of abstract underlying mental processes, including the nonlogical processes of imagining, symbolizing, free associating, repetition, condensation, displacement, and transformation.

The work on invention of this decade was reviewed by Richard Young in a bibliographic essay, "Invention: A Topographical Survey," that not only presented the methods of invention discussed above but also treated historical studies from ancient Greece to the present and studies of the contexts necessary for understanding and teaching these methods.

Review: Early Studies of Invention

In this decade, the first theories to emerge—Rohman and Wlecke's, Corbett's, and Young, Becker, and Pike's—responded to a gap in the composition theory and pedagogy of the day: a lack of invention. Each theory authorized its inventional practices by drawing on different interdisciplinary work: Rohman cited Cassirer, Langer, and existentialism; Corbett deployed classical rhetoric; and Young, Becker, and Pike drew on tagmemic linguistics, phenomenology, and studies of the inquiry process. Each theory treated the initiation of discourse and exploration but provided different heuristics to guide these acts. Young, Becker, and Pike also offered a guide for the verification of insight. But the purposes for invention were different in these theories: Rohman and Wlecke's goal was a writer's self-actualization; Corbett's was support of a thesis; and Young, Becker, and Pike's was new insights and understandings. These guides were also informed by different epistemologies for writing: reaching self-knowledge, locating known arguments and support, and constructing new knowledge. The decade also spawned different conceptions of prewriting and the composing process. None of these theories explicitly dealt with the social dimensions of rhetoric, but the nature of Corbett's and Young, Becker, and Pike's heuristics did not exclude the social. Their guides could be used collaboratively, as was demonstrated later in some textbooks. Further, these strategies had a social cast because the very nature of a heuristic is that it codifies effective practices in the community, helping students participate successfully in these communities. Although differences existed among prewriting, classical invention, and the tagmemic guides, the theorists proposing them were not in conflict with each other, attempt-

ing to discredit each other's inventional practices. Instead they saw them as complementary, accomplishing different ends. Disagreements were strong, however, over the value of heuristics versus reliance on the imagination, the nonlogical, and the unsystematic.

During this period, the writer was generally considered to have a unified coherent subjectivity and a powerful agency that could be enhanced by inventional practices. Most theorists constructed their practices for a writer who occupied a nongendered student position primarily in an introductory writing class. They proposed general heuristics that could function for different types of discourse, including expressive, persuasive, and expository.

New and Elaborated Theories of Invention: Mid-1970s to Mid-1980s

In the second decade of work on invention, new theories emerged, previous theories and practices were studied, and rhetorical epistemology was further discussed, with some issues becoming more contentious. Linda Flower and John R. Hayes developed cognitive rhetoric, studying composing processes through the use of protocol analysis. Others like Ann Berthoff continued to emphasize the imagination and the use of nonrational heuristics. A number of studies proposed Kenneth Burke's work, especially the Pentad, as an inventional strategy. More discussion occurred about classical rhetoric, tagmemic rhetoric, and rhetoric as epistemic. Some scholars introduced invention as the interpretation of texts, as hermeneutic, while still others mounted various critiques of previous inventional theories. Finally this period saw some meta-theoretical work, efforts to review and categorize theories of invention.

Cognitive Invention

Cognitive studies spawned a new model of writing and research on invention. In 1980, in two essays in *Cognitive Processes in Writing*, Linda Flower and John R. Hayes offered an early description of their cognitive writing theory and outlined dynamics of composing, such as setting priorities, drawing on routines, and juggling the constraints of knowledge and written speech through strategies like partitioning problems. In 1981, in "A Cognitive Process Theory of Writing," they

described their cognitive process model as a set of distinctive thinking processes that are orchestrated during composing. They demonstrated that these processes are hierarchical (one embedded in another) and goal-directed (guided by a network of goals). Using evidence from protocol analyses, they challenged the common sense view that knowledge of topics or text directs the process, arguing instead that goals direct the process. Their model included 1) the task environment (rhetorical problem: rhetorical situation, topic, audience, and goals); 2) long-term memory (knowledge about the topic and audience, writing plans, and problem representation); 3) planning (generating ideas, organizing, goal-setting, exploring and consolidating, stating and developing, writing and regenerating); 4) translating, 5) reviewing (evaluating, revising); and 6) the monitor that directs the processes. In "The Cognition of Discovery," they further delineated the nature of rhetorical problems, as situated, shared, and unique problem representations stemming from exigencies or assignments and from the audience. They described goals as the reader, persona or voice, meaning, and features of the text, contending that good writers respond to all aspects of their rhetorical problem. In "The Pregnant Pause: An Inquiry into the Nature of Planning," Flower and Hayes argued that writers pause to rhetorically plan, an hypothesis that they again demonstrated using protocol analysis and research on episodic structures. In "Plans that Guide Composing," they distinguished between ill-defined and well-defined problems, exploring the meaning and power of plans to help writers make large situations manageable. They also offered a sequence of procedures to enable writers to set priorities. In "Images, Plans, and Prose," they showed a range of ways that writers represent their composing plans, using semantic and other symbolic notations and abstract networks, including schemas, concepts, and metaphors that vary from one field to another. Flower's textbook, *Problem-Solving Strategies for Writing*, implemented their cognitive process model for technical writers.

During this period, many other cognitive studies were conducted on aspects of invention. For example, Marlene Scardemalia, Carl Beiter, and Hillel Goelman studied how three conditions of text production influence cognitive processes in composition: 1) short-term memory loss of the products of planning slows down writing; 2) interference from mechanical demands of the written medium competes for mental resources with the higher-level demands of content plan-

ning; and 3) the lack of directional signals, production signals such as to keep on going, and discourse schemata effect a general lack of coordination of language production. Several collections of essays also featured cognitive studies, some of which considered invention. In *Research on Composing*, edited by Charles Cooper and Lee Odell, some essays devoted attention to inventional theories and needed meta-rhetorical research on invention. In *Cognitive Processes in Writing*, edited by Lee Gregg and Erwin Steinberg, essays presented work on writing development, information-processing loads in writing, reflective thinking leading to epistemic writing, idea production, and writing as discovery. In *What Writers Know: The Language, Process, and Structure of Written Discourse*, edited by Martin Nystrand, some essays dealt with subjects like production factors; scripts, plans, goals, and themes; and knowledge of topics and audience. In *Research on Writing: Principles and Methods*, edited by Peter Mosenthal, Lynne Tamor, and Sean Walmsley, a few essays dealt with research practices for studying writing processes and the teaching of writing.

Non-Rational Invention, Shaping, Imagining, and Forming

In 1979, James Kinney argued for intuitive invention and non-systematic inventional practices. Toby Fulwiler and Bruce Petersen further advanced this discussion, proposing mumbling (low-level articulation), staring, moving, doodling, and noise. In 1980, James Britton, in a collection of essays from the Ottawa conference, offered another perspective on invention that he termed “shaping at the point of utterance,” arguing that writing itself is heuristic. Working from a comparison of speaking, Britton held that once writers’ words appear on the page, they act primarily as a stimulus to continue writing. Movements of the pen capture the movements of thinking in a moment-by-moment interpretive process. The act of writing becomes a contemplative act revealing further coherence and fresh patterns. This conception of a heuristic echoes Isocrates who, according to Richard Enos, defined writing as a heuristic that guided creativity and intellectual complexity (“Literacy in Athens”; see also William Benoit).

In 1981, Ann Berthoff proposed some inventional practices in *The Making of Meaning: Metaphors, Models, and Maxims for Writing Teachers*. As a way of “rediscovering the power of language to generate the sources of meaning” (70), she introduced learning the uses of chaos as the source for alternatives for the writer. In her discussion of inven-

tion, she said that in addition to such devices as heuristics, which she characterized as helping students to take inventory of what they knew, another way of getting started was to question what the reader needs to know. As an important way of forming concepts, she mentioned specifying and called for a reclaiming of the imagination, the active mind, which she argued finds or creates forms.

Burkean Invention

During this decade, a number of people advocated the value of the Pentad for heuristic purposes and the importance of many Burkean concepts for composition. In 1978, Kenneth Burke himself, in "Questions and Answers about the Pentad," provided a short account of his development of dramatism as a view of language as a mode of action rather than a mode of knowledge, of his extension of this concept to symbolic action in general, and then his move to theorize humans as symbol-using animals. In this account, he also spoke of symbolic action as public and social in contrast to the realm of non-symbolic motion in which we live and die as individuals: "No symbolic action is possible without a grounding in non-symbolic motion" (330). In terms of the Pentad as a heuristic, he pointed out that he had intended an interpretive role for the Pentad but that a heuristic purpose had its place as well. He explained: "My job was not to help a writer decide what he might say to produce a text. It was to help a critic perceive what was going on in a text that was already written" (332). He ended his discussion by insisting: "Not just the Pentad. But the ratios and circumference" (334). Several theorists interpreted some of Burke's concepts and their relevance for composition. In 1979, Charles Kneupper, discussing Burke's dramaturgical theory in terms of discourse production, explained the heuristic function of the pentad and its ratios as well as language itself as a motive for discoursing. In the same year, Joseph Comprone discussed several of Burke's key notions (the Pentad, terministic screens, perspective by incongruity, and identification) as means of writing critical essays. In 1983, Winterowd explained Burke's dramaturgical view of meaning, pointing out that Burke used a non-Aristotelian conceptual pivot, the representative anecdote, which does not lead to closure in contrast to the enthymeme. He argued that both Burke and many of our students are oppositional writers who should be understood and valued. Such writers do not start their essays with

theses followed by supportive material but rather begin and continue with anecdotes, examples, and stories that build toward a final point.

More on Classical Invention and Tagmemic Invention

During this decade, aspects of classical invention were further analyzed. In *Essays on Classical Rhetoric and Modern Discourse*, for example, several pieces addressed invention. John Gage argued that concepts of dialectic, enthymeme, and *stasis* support the view of rhetoric as a means of discovering and validating knowledge. This epistemic conception entailed mutual construction of knowledge between the audience and the writer, with the audience supplying the question or issue to be pursued and the premises for arguing toward probable truth. Janice Lauer examined three issues concerning the nature of invention in rhetorical history: differences in conceptions of the genesis of discourse, treatments of exploratory acts and their relation to judgment, and disagreements over the province of invention. James Raymond's essay offered a way of helping students to better understand Aristotle's enthymeme and example, renaming them assumptions and paradigm. In 1986, James Kinneavy argued for the importance of the neglected sophistic concept of *kairos*, the right measure and opportune time, explaining that *kairos* entailed an epistemology that brought timeless ideas into time, emphasizing values and involving free decisions. In the next decade, R. Gerald Nelms and Maureen Goggin surveyed this revival of classical rhetoric in Composition Studies

In 1980, Charles Kneupper, critiquing the tagmemic heuristic's terminology and its apparent redundancy, offered a revised version with six directives instead of nine. In 1979, Bruce Edwards published "The Tagmemic Contribution to Composition Teaching," which offered a comprehensive commentary on tagmemic invention.

Further Discussions on Rhetoric as Epistemic

At this time, several interdisciplinary scholars further debated the concept of rhetoric as epistemic, the relationship between rhetoric and philosophy and between language and thought. In 1976, Scott published a second essay, "On Viewing Rhetoric as Epistemic: Ten Years Later," that attempted to clarify several questions: "Is there one way of knowing or many? What sort of knowing does rhetoric strive to achieve? Is rhetorical relativism vicious?" (259). He answered these

questions by saying that there is a plurality of ways of knowing, that rhetoric is a constituent of any act of knowing (260), that rhetoric “aims at knowledge that is social and ethical: it has the potential of creating commitment” (259), and that rhetoric has an epistemic role in seeing and choosing possibilities for creating knowledge in specific situations. Scott also argued that rhetoric makes its contribution to knowledge in “understanding how human action is *decisive*” (261). He acknowledged that he held that reality is socially constructed (261), stating that the kind of knowledge rhetoric seeks is to “understand what it means to be persuaded and to persuade” (263). In response to the charge that rhetorical relativism is vicious, he offered two “common-sense” counter-arguments. In the first, he used the example of religious wars to illustrate that certainty can enable extreme actions. If one has recourse to standards outside the individual conscience or the interests of an immediate community, then one doesn’t feel responsible for making decisions. “Contingency is much less to be feared in creating chaos, wantonly or whimsically, than the spirit of axiomatic detachment” (264). In the second argument, he maintained that “rather than a standard-less society, or a maze of differing standards” (264), relativism identifies situations in which “standards have to be established cooperatively and renewed repeatedly” (264). Relativism would thus stimulate a responsibility for establishing agreement based on one’s traditions, seen only as traditions.

In the same year, Barry Brummett argued for an epistemic notion of rhetoric that entailed process and intersubjectivity. He critiqued the mechanistic point of view for its incompatibility with everyday experience, its faith in objective truth, its lack of concern with values, and its simplification of phenomena. In contrast he advocated an intersubjective reality characterized by ambiguity that he defined by this equation: sensation plus meaning equals experience. He asserted “only if reality is shared, that is, created by discourse, can it be changed or altered by discourse” (31). Echoing Scott, he argued for an ethic of rhetoric based on intersubjectivity, which entails more responsibility than idealist ethics. Finally he proposed a process methodology for joining experimental methods and rhetorical criticism.

In 1978, Michael Leff, Thomas Farrell, and Henry Johnstone also addressed aspects of rhetoric as epistemic. Leff reviewed and categorized four notions of rhetoric as epistemic that had been circulating in the 1970s: 1) a rhetoric that clarifies the relationship between a par-

particular problem and a fixed standard of truth; 2) a rhetoric that generates an autonomous form of knowledge based on social consensus; 3) a rhetoric that adjudicates between the first principles of science and/or speculative philosophy; and 4) epistemology as rhetoric ("In Search"). Farrell, in "Social Knowledge II," argued that rhetoric constructs knowledge in social fields through attributions of consensus that act as preconditions for the validity of a theory. Distinguishing between social and technical fields, he explained that social knowledge depends on personal relationships between advocates and their audience. Such knowledge, he argued, carries a normative force demanding that decisions be made or action taken. Johnstone asserted that Heidegger conceived of philosophy as fundamentally a rhetorical enterprise because he viewed the concept of destruction (an awakening, a recall from forgetfulness) as a primary task of philosophy. This interpretation, Johnstone argued, leads us to no longer consider rhetoric as an art of persuasion but rather as an art to totally reorient hearers.

In 1980, Charles Kneupper and Floyd Anderson noted that the field of Speech Communication had a need for rhetorical invention. They pointed out that a minimum inventional theory would concern itself with retrieval of information and ideas germane to a subject matter, while a more powerful conception would consider invention as playing a role in inquiry and discovery of new knowledge (321). In 1981, Richard Gregg, in "Rhetoric and Knowing: The Search for Perspective," reviewed distinctions current at the time, such as between technical and social knowing, between explicit and implicit knowledge, between knowledge including and precluding rhetoric, between what we know and the processes by which we know, and among critical, personal and social thought. He argued instead for a perspective that maintains a focus on how we come to know that begins with realizing that all knowledge is symbolic activity: "Perception moves with a generative activity to join physical or 'real world' information with cognitive purpose to create patterned experience" (142). He maintained that cognitive processes are tinged with affective states and that comprehension is linked with purpose and intention. He theorized that "inherent in all symbolic activity is the function of inducement" (143) to symbolize at all levels. He concluded that the study of rhetoric is "the study of symbolic inducement however it occurs within these realms of cognitive, systemic, and social activity" (144).

In 1982, Richard Cherwitz and James W. Hikins, in "Toward a Rhetorical Epistemology," posited that rhetorical discourse is "the description of reality through language and that knowledge is justified true belief" (135). They discussed truth, belief, and justification as conditions for having knowledge. They also defined several premises of a rhetorical epistemology: "that matters of epistemology are both conceptually and logically *prior* to matters of ontology" (140), that a reality exists independent of individual attitudes and beliefs, and that a "definition of knowledge is useful and productive if it affords linguistic and conceptual classification of the ways in which epistemic judgments and their terminology are employed" (141). These notions helped to separate definitional from methodological issues. They held that "the propositionality of all knowledge rests in the fact that it is conceived, understood, transmitted, and employed *via language*" (148). Finally, they described rhetorical discourse as differentiative, associative, preservative, and perspectival. In 1986, in *Communication and Knowledge*, they argued that coming to know something is, at least in part, a rhetorical activity. They investigated how epistemic judgment can be assessed philosophically using a theory of rhetorical perspectivism in which derived meanings, although linguistic, are tied to a real and knowable world.

These different positions on rhetoric as epistemic strengthened such claims for the importance of rhetorical invention as: 1) rhetoric constructs all that there is to know, 2) rhetoric constructs knowledge in social worlds, 3) all knowing is symbolic activity, 4) philosophy is rhetorical, and 5) rhetoric adjudicates between competing disciplinary paradigms. The differences among these conceptions would continue to be argued, prefiguring advocates and critics of postmodern theories of invention in the next period.

Rhetorical Invention as Hermeneutics

In this period, the long-standing historical debate continued over whether invention's purpose was primarily heuristic, to help speakers and writers construct knowledge and produce discourse, or whether its role was hermeneutic, to help writers interpret texts already written. As discussed previously, Augustine had emphasized the latter role of invention to guide the interpretation of the Scriptures, and Kenneth Burke had contrasted these two roles in his discussion of the uses of

the Pentad. A number of scholars espoused a hermeneutic view of invention, particularly scholars with a background in literary studies.

In 1985, Steven Mailloux proposed rhetorical hermeneutics as “historical sets of topics, arguments, tropes, ideologies, and so forth, that determine how texts are established as meaningful through rhetorical exchanges”(629). He maintained that interpreters neither discover nor create meaningful texts, but engage in interpretive work that “attempts to convince others of the truth of explications and explanations” (630). He further argued that rhetorical hermeneutics provides histories of how particular theoretical and critical discourses have evolved because persuasion always takes place in changing contexts of disputes. In “The Structure of Textual Space,” Martin Nystrand also discussed invention as hermeneutical, considering interpretation as the construction of meaning and stating that language production can be viewed as interpretation in a sphere of meaning.

In 1987, Lynn Worsham, in “The Question Concerning Invention: Hermeneutics and The Genesis of Writing,” set out a theory of invention based on Heidegger’s philosophy of Being and critique of technology. She advanced Heidegger’s interpretation of *techne* as meaning “bringing forth” and “to make manifest” and thus related to “*aletheia*, or the truth-process in which something comes into unconcealment” (207). She proposed an hermeneutical understanding of writing that focused on the experience of questioning not *what* but *how* (218). She explained that Heidegger’s Typology of Being, rather than providing strategies for effective guessing, provided “hints, clues, indications of the places where the event of meaning localizes itself” (219). She also found important Heidegger’s understanding of “truth as a happening in human existence” (219) as well as his theory that the interaction between being and language was one of undergoing an experience, entering into it, submitting to it, yielding to it, being owned, possessed and appropriated by it. This appropriation was “the highest and most profound play” (227-28). The essence of art for Heidegger was, she explained, disclosure; “it recovers our sacred connectedness to the earth and remembers for us that ‘upon the earth and in it, historical man grounds his dwelling in the world’” (230). She turned to Cyril Welch’s hermeneutic interpretation of writing as an art: “Reflective writing says *how things are* and, moreover, *how things might be*” (232). It is a kind of writing” whose topos and ethos are potentiality and possibility” (232). For Worsham, then, the task of writing is to

“subtract the familiarity and alreadiness of what has been said” (233). She claimed that “writing happens first of all as a hermeneutic process, as an event of disclosure” (235).

Critiques, Cautions, and Rejoinders

During this decade, critiques and cautions about previous work on invention were mounted. In 1977, Susan Wells asserted that the field must find tools to evaluate invention procedures, tools that are “grounded in some sense of the value of the information and attitudes that invention procedures generate” (469). Critiquing Christensen’s work and the tagmemic model, she claimed that popular heuristics in composition were empiricist in their epistemology and contemplative in their ethos. In 1978, James Kinney also criticized tagmemic theory, saying that its exploratory heuristic did not provide total or in some cases significant knowledge, was epistemological in contrast to the classical topics, and did not offer adequate treatment of arrangement. Lee Odell responded to Kinney’s critique, stating that Young and Becker claimed only that using the procedure would increase the chances of discovering the solution to a problem, not that it would supply knowledge. Odell further rejoined that systemic inquiry was not precluded even by those who emphasized writing itself as an act of discovery. Odell also raised important questions about heuristic procedures that needed to be answered: Is training in systematic inquiry equally useful for all? Are such procedures equally useful for all types of writing? At what point does systematic inquiry fit into the composing process? What form should systematic inquiry take? And how do the various heuristic procedures compare and contrast?

In 1980, Mike Rose further cautioned that heuristics could be turned into formulas. He distinguished between algorithms, heuristics, sets, and plans, pointing out that several factors cause writer’s block: treating heuristics as algorithms, using inappropriate sets of questions or disciplinary methodical orientations, and setting too many rules. In 1985, Gary Olson put forth two diagnostic instruments for detecting problems students had with invention: one based on the work of Lee Odell and the other based on Michael Polanyi’s idea of tacit knowledge.

At this time, scholars in other fields were also debating these matters. Responding to common sense points of view that heuristics interfered with the natural and mysterious processes of creativity, David

Perkins, in *The Mind's Best Work*, argued that heuristics were only one type of numerous behaviors that humans had developed to help with thinking. He further pointed out that heuristics ("Plans Up Front") like education cut deep into the course of thought, are used by experts to solve open-ended problems without guarantees, and are teachable. He reviewed debates about whether general or discipline-specific heuristics are preferable and more effective, concluding that both types had advantages. He explained that creators need particular knowledge and experience to function in a field, knowing the informal rules of the game. On the other hand, when they operate in unfamiliar areas, general strategies provide an initial approach to an inquiry (213). Perkins and Gavriel Salomon offered another perspective on this issue in "Are Cognitive Skills Context-Bound?" reviewing thirty years of research on the subject. They concluded that general strategic knowledge and specialized domain-specific knowledge function in close partnership and stressed the importance of teaching general heuristics in a contextualized way and helping students to transfer them to a range of situations (152). From the perspective of Rhetoric and Composition, Michael Carter also tackled the question of general versus specific heuristics, arguing for a pluralistic theory of human expertise that entails both kinds of heuristics. He explained that expertise develops through five stages. In the early stages, writers use context-free heuristics while in later stages they use more local writing knowledge. Expert writers, however, still use general strategies when they write in new areas. Agreeing with Perkins and Salomon, he suggested that this theory of expertise implies that instruction in general writing heuristics has value, but that it needs to be situated and modeled.

Overviews of Inventional Theories

In 1980, Virginia Underwood completed a study of theories of heuristics in place at the time, comparing the theories' epistemological claims, controlling metaphors, heuristics, conceptions of the purpose of discourse, goals of the pedagogy, assumptions about the writer, and treatments of arrangement and style. Her study focused on the classical topics, Rohman's and Wlecke's pre-writing, Zoellner's behavioral pedagogy, Burke's Pentad, tagmemic rhetoric, and D'Angelo's conceptual theory. In 1987, Elizabeth and William House reviewed different conceptions of problem-solving, arguing that the theories fall on a continuum based on the ideas of internal and external validity and

claiming that both types are necessary in a search for truth. In 1989, Terry Beers discussed the “new classicist” and “new romanticists” theories of invention, asserting that “contrasting perspectives suggest the possibility of *dialectical* rather than exclusive relationships” (25). Engaging in an axiological analysis of these theories, Beers urged a consideration of their value and the relative permanence of these values, thereby doing justice to their interdependence. At the end of this decade, Winterowd, in “Rhetorical Invention” in *Composition/Rhetoric: A Synthesis*, discussed some of the previous work on invention, stating that “rhetorical invention concerns the generation of subject matter; any process—conscious or subconscious, heuristic or algorithmic—that yields something to say about a subject, arguments for or against a case” (35). He represented different positions on heuristics, putting them into the framework of what Paulo Freire called “problematization” (38-46).

With the development of so many inventional theories and practices, Richard Young, in “Paradigms and Problems,” argued that the field needed research to make reasonable judgments about the adequacy of these theories of invention. He suggested that researchers should ask two general questions of each theory:

1. Does it do what it claims to do? That is, does it provide an adequate account of the psychological processes it purports to explain? And does it increase our ability to carry out these processes more efficiently and effectively?”
2. Does the theory provide a *more adequate* account of the processes and *more adequate* means of carrying them out than any of the alternatives?” (40).

He called for different kinds of investigation of questions: empirical, bibliographic, philosophical, historical, and meta-rhetorical.

Review: Elaborated Theories of Invention

During this period, earlier heuristics were tested, adapted, applied, and critiqued. New theories extended the range of invention from cognitive to nonrational to hermeneutic, with the divide widening between inventional claims for heuristics and hermeneutics. Empirical studies, including protocol analysis, were used to develop and test cognitive inventional theories. Arguments escalated over rhetoric as epistemic. Much of this work differed from that in the previous de-

cade in that studies revolved around neither specific heuristic strategies nor instructional practices, but instead focused on epistemological matters. This decade of inventional studies closed in 1987 with Richard Young's second bibliographic essay, "Recent Developments In Rhetorical Invention," which clustered its entries under the following headings: composing process; rhetoric as an epistemic activity; situational context, including audience and ethos of the writer; heuristics, pedagogy and methods of invention; and the history of invention. These headings bespeak the expansion and complication of inventional studies during this decade. The conception of the subject position of the writer in theory and practice changed little during this period..

Diversified Invention: Mid-1980s to the New Millennium

In this third period, studies of invention migrated to many sites, including writing in the disciplines and the rhetoric of inquiry. Larger theoretical movements also influenced studies of invention. The rise of social construction, deconstruction, poststructuralism, postmodernism, and cultural studies challenged conceptions of writers' agency, individual invention, certainty and the advisability of general strategies. These theories posited multiple writer positions, writers written by language, social conceptions of invention, the importance of local knowledge, discourse communities, and the role of readers and culture in inventional acts. Theorists also foregrounded the hermeneutical, interpretive, and critical purposes of invention while previous theories of invention were modified.

Invention in the Disciplines

As the field of Writing in the Disciplines emerged, scholars began to study invention in diverse fields. Carolyn Miller provided an extensive bibliographic essay, "Invention in Scientific Research in Technical Communication," in which she treated invention as encompassing "all the means by which writers come to their matter, whether consciously and systematically or intuitively and routinely," involving "presuppositions, premises, values, inspiration, work activities—anything that leads to or is taken as a 'good reason'" (123-24), including both writing as a process and also criticisms of writing as a product (124) as they illuminated invention. She divided invention into three areas. In the first, "Invention As Scientific Inquiry and Technical Problem-Solving,"

she examined the arguments over whether rhetoric participated in the context of discovery (the intellectual environment in which ideas originate), discussing Popper's view; the hypothetico-deductive view; the acquiescence to inspiration; Hanson's work on the reasoning processes of a scientist; Wartofsky's theory of heuristic thinking; Polyani's notion of tacit knowledge; the roles of special and pictorial thinking; Black's work on models, often expressed in analogies and metaphors; Fleck's idea of a thought-collective; Holton's account of the nascent moment of scientific discovery; and various problem-solving models, including Herbert Simons's and the Delphi method. In her second area of invention, "Contexts, Constraints, and Forums for Presentation," she discussed the perspective that persuasion is crucial for science, not for discovery but for justification. She cited Charles Bazerman's analysis of the arguments in formal scientific literature; work on the *ethos* of science; discussions of the effect of the working environment on rhetorical invention (e.g., James Watson, Francis Crick, Bruno Latour and Steve Woolgar); the literature on decision making in organizations; and lists of special topics in areas of technical decision making. In her third area of invention, "Applications, Heuristics, and Teaching Methods," she explored the limited accounts of instruction in developing the art of invention for science and technical discourse.

Other scholars also studied the inventional practices of scientists, engineers, philosophers, musicians, economists, and so on as the following examples illustrate. Charles Bazerman, in *Shaping Written Knowledge*, studied research articles in physics, particularly those using spectroscopy as a primary technique, demonstrating that this discourse was linked to epistemology; "beliefs about what can be known, how it can be known, in what form it can be expressed, and how it should be argued" (174). Among his many findings, he demonstrated that the arguments in the articles gave insight into how graphic features (e.g., spectral lines and the substances that produce characteristic patterns) connect with epistemological and intellectual changes in the field: as the work advanced in the field, the articles become "more theory based and ultimately more self-conscious about their constructed theoretical character" (177). Greg Myers examined the grant proposals and journal articles of two biologists, including their efforts to define their problems. Michael Halloran studied the work of James Watson and Francis Crick, describing their use of *stasis* and the topics ("Birth"). Rodney Farnsworth and Avon Crismore analyzed Darwin's use of the

visual in *The Structure and Distribution of Coral Reefs*, illustrating how he employed drawings, diagrams, and maps at “points of tension between his audience’s preconceptions” and his new theory, establishing his ethos and argument (11). They also examined Darwin’s meta-discourse about these visuals.

Other studies included John Lyne’s investigation of bio-rhetorics, which he defined as “a strategy for inventing and organizing discourses about biology” (38), giving the example of the term *selfish gene* in the study of insects. Referring to invention as “the art of determining the ‘sayables’” (49), he contended that “the task for rhetoric goes beyond interpretive understanding, or hermeneutics. In guiding the creation of discourses, not just the interpretation of existing texts, the work of rhetoric is to invent language strategies that bring about change” (37). John Angus Campbell in his study of Darwin’s notebooks stated that another way of looking at the notebooks was to see them as following “an informal logic, a logic of rhetorical invention” (59). He explained that each of Darwin’s theories was grounded in a central reproductive metaphor and that Darwin’s efforts to support his insights started with a specific example and continued with a logic of implication. He further concluded that scientific discovery and rhetorical invention became united in a logic of inquiry.

Carolyn Miller and Jack Selzer examined the special topics used by engineers in writing reports, asserting that Aristotle had intended a kind of special topic based on the specialized knowledge of disciplines. They defined special topics as “patterns of thought deriving from specific genres, institutions, or disciplines—patterns that are material to gaining the assent of the audience within a particular discourse community” (316). In engineering reports, they analyzed the function of generic special topics (e.g., transit development plans and the proposals that won the contracts for those plans); institutional topics (e.g., systems analysis, computer modeling, values of organizations, definitions of efficiency, productivity, and cost control); and disciplinary special topics, such as those for transportation engineering: memory scheduling, coordinate scheduling, pulse scheduling, and headway and streamlining. Miller also studied the role of *kairos* in science, quoting Eric Charles White’s definition of *kairos* as “a passing instant when an opening appears which must be driven through with force if success is to be achieved” (“Kairos” 313). She reviewed the time aspect of *kairos* in the work of such figures as Francis Bacon, Karl Popper, Thomas

Kuhn, and Stephen Toulmin and the space aspect of *kairos* in the work of James Watson and Francis Crick and Oswald Avery. In 1994, Richard Brown argued for the importance of studying the “contexts for discovery” in the sciences—“the practices of representation in the texts and contexts of presentation” (3), explaining how these contexts could be examined through narratives of conversion and illustrating these narratives in fiction, travelogue, and ethnography. He concluded that these narratives exhibit such features as a construction of the self, ontological development from doubt to certitude and from the material to the spiritual (26), and epistemological obsessiveness.

The “Rhetoric of Inquiry,” an important interdisciplinary movement, was described in several essays by John Nelson, Allan Megill, and Donald McCloskey. In “Rhetoric of Inquiry: Projects and Prospects,” Nelson, a political scientist, and Megill, an historian, set out the background for this movement, identifying the theorists whose work set the stage for it: Nietzsche’s assault on the subject/object dichotomy; Heidegger’s imposition of severe limits on the subject/object oppositions and his notion of “*Dasein*, [as] constituted ‘always already’ by the situation in which it finds itself” (24); Dewey’s renunciation of certainty as a modern aim and his engagement in public life; Wittgenstein’s reconception of certainty and his rhetorical approach to language in actual practices; Gadamer’s rhetorical attention to dialogue and communication and his resolving of argument and epistemology into the science of interpretation, hermeneutics; Rorty’s replacing of epistemology with hermeneutics and his turn from certain truth and coercive argument; Habermas’s endowing philosophy with the problematics of rhetoric, his critique of distorted communication, his more directly political version of the rhetoric of inquiry and his self-conscious rhetorical treatments of inquiry; Derrida’s recognition that reality is rhetorically constructed; and Foucault’s account of the devices of language and argument which defend modern power (24-27). Nelson and Megill also noted that Perelman, Toulmin, and Thomas Kuhn anticipated the rhetoric of inquiry. According to them, the Rhetoric of Inquiry opposes modern epistemology that considers only two main images of science: “science as formally demonstrative and science as empirically compelling” (23). They went on to argue that inquiry allows scholars to accept uncertainties that lead to “a richer appreciation of questions and complexities” (25) and helps them to understand the “diverse standards and strategies of science on their own levels”

(25), connecting them to their logics, methods, aesthetics, economics, histories, and sociologies (25). They explained further that this interdisciplinary field explores inquiry as “networks of cases, stories, metaphors, measurements, experiments, seminars, and publications” (31), involving “more subtle and sympathetic attention to discovery, meaning, persuasion, and sociology” (31), and encompassing psychological studies of inference, communication studies of dialogue, and anthropological studies of institutions and symbols of inquiry. The University of Iowa Project on Rhetoric as Inquiry (POROI) has been the site for this movement [<http://www.uiowa.edu/~poroi/>].

Social Construction and Invention

In 1982, Patricia Bizzell challenged what she argued was the individual cast of inventional theories and practices, categorizing theorists as inner-directed or outer-directed. She described the latter as those interested in the social processes whereby thinking powers are shaped and used in communities (215), stating that the thrust of composition writing instruction should be the analysis of the conventions of particular discourse communities. She concluded that in order to have a complete picture of the composing process, we need answers from both theoretical schools to explain the cognitive and the social factors in writing development and the relationship between them. In 1986, Kenneth Bruffee—drawing on the work of Kuhn, Richard Rorty, and Geertz—advocated the social construction of knowledge, which included cognition, emotion, motivation, perception, imagination, and memory. He maintained that this theory characterized knowledge as non-foundational, generated by socially justified beliefs about reality, and non-problematic with language at the center. It viewed thought as constructed within a community of knowledgeable peers and vernacular language. (See also Bruffee, “Writing and Reading”.)

Also in 1986, Karen LeFevre, in *Invention as a Social Act*, explained that “invention is conceived broadly as the process of actively creating as well as finding what comes to be known and said in the discourse of any discipline” (33). She characterized invention as a dialectical process in which the individual and the socio-culture are coexisting and mutually defining, explaining that invention is “enacted by inventor and audience” and that “the act of invention can be thought of as having “two parts: the initiation of the invented act and the reception and execution of it” (38). The execution or completion may be by a

number of others (e.g., another part of the rhetor, the perceived actual audience, a collaborator, or a reader) because inventing over time entails transactions and intertextuality. She identified several versions of social invention: 1) as the self being socially influenced or even constituted; 2) as using language which is socially created and shared by discourse communities; 3) as building on knowledge accumulated from previous generations; 4) as internal dialogue with imagined others or a construct of audience that supplies premises as structures of belief; 5) as involving others as editors and evaluators; 6) as influenced by social collectives; and 7) as the reception, evaluation, and use of discourse dependent on the social context. She also categorized existing theories of invention, placing them on a continuum from Platonic, to Internally Dialogic, to Collaborative, and to Collective. In 1988, Bennett A. Rafoth and Donald Rubin edited a collection of essays, *The Social Construction of Written Communication*. In the opening essay, Rubin identified four types of social constructive processes: 1) writers' constructions of mental representations of the social contexts in which their writing is embedded; 2) writing as a social process that creates or constitutes social contexts; 3) writers creating texts collectively in discourse communities; and 4) writers assigning consensual values to writing (2).

Counterstatements and Socio-Cognitive Invention

Several scholars critiqued some of the social constructivist assumptions. In 1991, Joseph Petraglia challenged the notion that knowledge is constructed by consensus, that it is discovered through discourse, and that reality changes as discourse changes. He argued that these ideas lead to a relativist theory that collapses under its own weight and involves a dualism between the mental and the physical.

In response to critiques of cognitive rhetoric, in "Cognition, Context, and Theory Building," Linda Flower argued for an interactive theory between cognition and context, for the value of a grounded theory (based on observation), a theory that helps us to learn something we didn't know about the individual and society, helps us to teach, acknowledges the pressure and potential of social context, and addresses the ways writers negotiate the context and create goals. The principles she articulated included

1. context cues cognition: dictates the problem; offers a repertoire of conceptual frameworks; provides cues to action (goals, criteria, strategies); and sets criteria;
2. cognition mediates context: there are individual differences in task representation; different goals, and tacit meditation; and
3. a bounded purpose is a meaningful rhetorical act with constraints, choices, and a web of purposes (goals, plans, intentions, and ideas). (287-94)

Flower's 1993 essay, "Cognitive Rhetoric: Inquiry into the Art of Inquiry," outlined several premises for a socio-cognitive stance: 1) meaning is made for a purpose; 2) purposes are made, not given; 3) the networks of intentions that writers construct are part of a larger rhetorical, social, and cultural situation; 4) meaning-making as a negotiated activity reveals tensions between personal agency, social influence, and received knowledge; 5) understanding meaning-making as a rhetorical action will entail more than a single dimension of an event; and 6) a fully specified, grounded observation-based theory that links cognition and context is based on an educational need for informed accounts of individual and group differences. She pointed out that cognitive rhetoric always asks for evidence and considers claims as statements about greater or lesser probability. She identified ways in which this rhetoric fits into epistemic rhetorics, emphasizing that it is "a set of questions and a repertoire of interdisciplinary methods for trying to answer them—it is a scaffold for inquiry" (174). Its method is interplay between observation and inference.

In 1994, Flower, in *The Construction of Negotiated Meaning: A Social Cognitive Theory of Writing*, further outlined a socio-cognitive theory of writing, which features an inventional heuristic called collaborative planning, distinguishing between schema-driven, knowledge-driven, and constructive planning that tailors a plan to the rhetorical situation. In collaborative planning "the writer (as planner) explains and elaborates his or her plan (or partial text) to a partner (as supporter). The supporter listens, asks questions, and encourages the writer to develop his or her plan" (142). Flower identified strategic knowledge as an example of the kind of inventional thinking her theory supported, defining strategic knowledge as understanding in action characterized by three elements: setting goals, using strategies, and having meta-cognitive awareness. Identifying three current metaphors

for how meaning is made—reproduction (reproducing existing meaning), conversation (e.g., consensus reaching, meaning as a product of interaction, and combative dialogue), and negotiation—she critiqued the first, pointing out that students transform and elaborate meanings and that this position entails textual determinism; she faulted the second, showing that conversation often excludes the marginalized and has difficulty with the notion of individual cognition and agency; and she adopted the third metaphor, negotiation, as the position of socio-cognitive rhetoric in which meaning is made not only in conversation but also in the minds of conversational partners in the socially situated but often solitary acts of writers. She characterized negotiation as a dilemma-driven, goal-directed effort to construct meaning in the face of forces such as disputes, competing interests, and patterns of power, arguing that negotiation is a response to multiple voices or kinds of knowledge that can shape action, arbitrate power relations, navigate through problems, avoid difficulties, and satisfy some goals.

Further Cognitive and Creativity Studies

During this decade, cognitive studies continued to investigate the relationship between thinking and learning. In 1987, Judith Langer and Arthur N. Applebee, in *How Writing Shapes Thinking*, reviewed many studies on this subject and conducted their own research on how writing works in support of learning. They demonstrated how different kinds of writing lead students to “focus on different kinds of information, to think about that information in different ways, and in turn to take quantitatively and qualitatively different kinds of knowledge away from their writing experiences” (135). In *Cognition and Instruction*, edited by Ronna Dillon and Robert Sternberg, essayists focused on cognition in different fields. Dillon posed the overall question: “What do experts know that novices do not?” (2) His essay examined the types of requisite knowledge underlying successful problem solving, differentiating declarative, procedural, and self-knowledge. Marlene Scardemalia and Carl Bereiter discussed higher order abilities in writing, arguing that they require more educational direction than natural endowments and skills learned through social interaction. Raymond Nickerson addressed the reasoning process, discussing automatic versus deliberate inferencing, closed versus open problems, development of beliefs, and evaluation of informal arguments.

In 1994, Cheryl Geisler, in *Academic Literacy*, argued that educators need to help students go beyond accepting textbook knowledge into questioning and intersecting their own knowledge with new information. She contrasted the literacy of those who write with domain knowledge and those who write rhetorically. In 1995, Mary Murray, in *Artwork of the Mind: An Interdisciplinary Description of Insight and the Search for It in Student Writing*, reviewed the literature on insight and developed an insight scale to measure the degree to which a writer resolved a dissonance in an expressive essay. In 1996, Mihaly Csikszentmihalyi published *Creativity: The Flow and Psychology of Discovery and Invention* in which he discussed a long-range research project that examined how creativity develops over a lifetime. He defined creativity as an “interaction of a system composed of three elements: a culture that contains symbolic rules, a person who brings novelty into the symbolic domain, and a field of experts who recognize and validate innovation” (6). To analyze these three aspects, Csikszentmihalyi interviewed 91 exceptional individuals.

Deconstruction, Poststructuralism, Postmodernism, and Invention

During this period, theories of deconstruction, poststructuralism, and postmodernism offered new perspectives on the relationship between knowledge and discourse, impacting work on invention. Sharon Crowley, in *A Teacher's Introduction to Deconstruction*, provided a useful overview of some of deconstruction's tenets with import for composition and invention. She explained that this theory deconstructs the ideas that the composing process begins with the originating author, that writing represents or repeats the student's knowledge, that language is a transparent medium, that the author is the center of writing, and that the absence of readers is a necessary condition for composing. According to Crowley, these challenges to the writer's agency raise questions about the sources and nature of inventional acts, the role of readers in invention, and about inventional theory more broadly.

In 1986, Lester Faigley assessed three competing theories of process, including their inventional theories: 1) the expressive, valuing integrity (believing what is said), spontaneity (stressing processes of the creative imagination), and originality (the innate potential of the unconscious mind and self-actualization); 2) the cognitive, valuing heuristics and recursive processes; and 3) the social, valuing discursive communities and language development as an historical and cultural

process. He concluded that a disciplinary basis for the study of writing would include the best of these theories. In 1988, James Berlin situated composition theories within three ideologies: cognitive, expressionistic, and social-epistemic, critiquing the first two by arguing that cognitive rhetoric centers on the individual mind whose structures are considered to be in perfect harmony with the structures of the rational, invariable, material world, and expressionistic rhetoric whose epistemology stresses the power of the inherently good individual and whose writing process seeks self-discovery. He advanced social-epistemic rhetoric, which, he contended, is a self-critical dialectal interaction among the writer, society, and language.

In an essay in *Rhetoric Review*, Berlin explained that poststructuralism considers the subject (the writer) as the construction of various signifying practices and uses of language in a given historical moment. The inventional work of rhetoric, then, he continued, is to study the production and reception of these signifying practices in a rhetorical context and to study cultural codes that operate in defining the roles of writer, audience, and the construction of matter to be considered. (See also Clifford and Schilb.)

In 1993, Lester Faigley, in *Fragments of Rationality: Postmodernity and the Subject of Composition*, summarized several postmodern tenets that impact theories of invention. The first was that nothing exists outside contingent discourse: no master narratives of human progress, no universal experience, no human rights. Postmodernism rejects the primacy of consciousness, with knowledge instead originating in language and with the subject being the effect of discourse. Postmodernism also challenges agency and with it a conscious and directed view of invention. It pushes composition to surrender its beliefs in the writer as autonomous self and instead to view the writer as written by the discourse. Also in that year, in "Rhetoric as Epistemic: What Difference Does that Make?" Robert Scott argued that "some version of the claim that rhetoric is epistemic (along with the corollaries that unmediated Truth is impossible and that the seeming priorness of Truth is but the arbitrariness of punctuating episodes) is vital to a sense of rhetoric as genuine and important" (128).

Expanding postmodern implications for invention, Victor Vitanza in "Three Countertheses" contrasted invention with paralogy, drawing on Lyotard's *The Postmodern Condition*. He deemed traditional invention as "smooth, continuous, and controlled and accounted for by

a system or a paradigm of knowledge and which is used to promote the capitalistic, socialistic, scientific ‘efficacy’ of that system or paradigm” (147), in contrast to paralogy in Lyotard’s terms as “discontinuous, catastrophic, nonrectifiable, and paradoxical.‘ It (re) turns—that is, radically tropes—against the system, or paradigm of knowledge, ‘changing the meaning of the word *knowledge*’ (*Postmodern* 60)” (147). He went on to further differentiate the two: “Whereas invention is used for traditional or modern science, paralogy is used by postmodern science” (147). Vitanza explained that instead of consensus, Deleuze and Guattari focus on ‘outsider thought’, ‘nomad thought’, and schizo-dissensus” (148). Contrasting the purposes of invention in Flower and Hayes’s model with those of Deleuze and Guattari, he maintained that “What appears to be writing as discovery is only—unbeknown to its unself-conscious mystified self—writing that uncovers what had already been predetermined by the modes, or the social codes, or production and representation” (150). On the other hand, he explained that Deleuze and Guattari had developed an anti-model based on “desire and schizoexcess, on capitalism and schizophrenia cum schizoanalysis” (150) whose antipurpose is to critique the modes of representation, decoding them “to free the libidinal energy or, rather, desire” (150). Vitanza pointed out that Deleuze and Guattari find rational consensus suspiciously like political oppression and that commonplaces “have an insidious way of only fostering the dominant discourse” (151).

Also in 1998, Michael Bernard-Donals characterized the postmodern antifoundational world, saying that the “antinomian divisions implied by the Cartesian cogito—subject/object, mind/world, materiality/cognition—have been thrown over in favor of a discursive world where certainties are themselves the products of human invention, and where our language shapes our lives” (436). He contended that teaching writing now entails helping students to see that their writing engages them in hermeneutically remaking their life-worlds (437). He advanced Roy Bhaskar’s theory of transcendental realism that provides, he maintained, a stronger theory of human agency, allowing “a connection between the situatedness of human activity and the material constraints,” and that “connects human activities like observation and work to the possibility of real social change” (447).

In response to some of these postmodern positions, Barbara Couture in *Toward a Phenomenological Rhetoric* addressed what she called the “exclusion of truth from writing that now marks our textual schol-

arship [reflecting] a critical turn that has been accomplished in two moves: first, in our acceptance of philosophical relativism as the basis of all truth claims; and second, in our acceptance of personal resistance as *the* method of securing a true and valued self-identity” (2-3). She proposed a phenomenological rhetoric of writing that “considers writing as an activity that is consonant with the view of people as purposeful beings” (3). She posited three central premises of this rhetoric: 1) all essences or truths are located in subjective experience; 2) truth is an outcome of intersubjective understanding; and 3) intersubjective understanding progresses toward truth through writing (4). She argued that in such a rhetoric, practices guided by phenomenological principles can be validated as conscious, public, and collaborative efforts to know the truth of the world. Further, she introduced three standards for evaluating the truth and rightness of discourse: congruence, consensus, and commensurability.

Critical Rhetoric

Within the field of Communication Studies, a group that came to be known as Critical Rhetoricians fostered hermeneutical inventional acts that have interested some composition theorists who were developing poststructuralist and postmodern composition theories. In 1989, Raymie McKerrow presented a theoretical rationale for a critical rhetoric, elaborating eight principles to guide the act of criticism. He argued for critique as a transformative practice that

recognizes the materiality of discourse, reconceptualizes rhetoric as doxastic as contrasted to epistemic and as nominalistic as contrasted to universalistic, [that] captures rhetoric as ‘influential’ as contrasted to ‘causal,’ [that] recognizes the importance of absence as well as presence, [and that] perceives the potential for polysemic as opposed to monosemic interpretation, and as an activity that is ‘performed.’ (91)

He explained the critique of domination and the critique of freedom. The first focuses on the discourse of power, of ideologies as rhetorical creations. The second entails a nontraditional historical analysis that seeks differences and discontinuities, not privileging the options it raises for considerations, but remaining free to open new possibilities for thought and action (96). According to McKerrow, critical rheto-

ric's task is to "undermine and expose the discourse of power in order to thwart its effects in a social reality" (98). In 1991, Robert Hariman critiqued McKerrow's characterizations of *doxa* and *episteme* and argued that McKerrow's writer of critical rhetoric was a disembodied modernist thinker having no identifiable social location, matched by a universal audience.

Michael McGee also discussed critical practice as invention, calling attention to the "formation of texts" in their original fragmented form. He theorized that the critic as inventor interprets for the consumer the meaning of fragments collected as a text. He also offered eight principles for defining critical rhetoric: 1) critical rhetoric is not method but a practice; 2) the discourse of power is material, existing in and through language; critical rhetoric aims at transformation; 3) rhetoric constitutes doxastic rather than epistemic knowledge, focusing on how the symbols come to possess power, bringing the "concealed to the forefront;" 4) naming is the central symbolic act of a nominalist rhetoric, directed against universalizing tendencies; 5) influence is not causality; 6) absence is more important than presence in understanding and evaluating symbolic action; 7) fragments contain the potential for polysemic rather than monosemic interpretation; and 8) criticism is performance, focusing on the activity as a statement and the critic as arguer or advocate for an interpretation of collected fragments (108).

In 1990, Dilip Gaonkar critiqued McGee for problematizing the character of the critical object. He felt that McGee viewed rhetoric as a "globally constitutive agency," in which rhetoric is a material social process that constitutes a wide range of objects—beliefs, attitudes, actions, events, text, selves, and even communities" (290). He considered McGee to view rhetoric as "a process ontologically prior to its products" (291). Gaonkar pointed out that McGee's essay, "A Materialist's Conception of Rhetoric," presented a variation on the dialectic between object and method (303), constructing a materialist process model in which rhetoric is a global object and criticism becomes an object of study instead of a means of study" (305). Further Gaonkar argued that Michael Leff's textual criticism, which studies exemplary texts in order to find the possibilities of rhetoric as an art, seeks to understand these discourses in terms of how they work, how they are constructed, and how they respond to the situation, thereby pushing rhetorical criticism into hermeneutics. He maintained that Leff,"

through the process model was inclined to habitually defer the text” (310), considering rhetorical criticism as an interpretive discipline.

In 1990, Carole Blair and Mary Kahl applied some of these theories to historical studies. In their essay on revising the history of rhetorical theory they identified the inventional choices that historians make, arguing: “to the extent that we take the history of rhetoric seriously, we must take the historian’s inventional choices as seriously” (148). Blair in “Contested Theories of Rhetoric” examined some of these inventional choices and their consequences in two major approaches. The first traced influence through scorning departures from ancient doctrines, focusing on one theorist’s influence on another at the expense of what they said about rhetoric, dismissing or overlooking theories that did not fit a pattern of continuity, and minimizing documentary evidence. The second approach inscribed rhetorical theories within their own temporal contexts, using standard period divisions and often obscuring internal differences within periods.

Epistemic Rhetoric, the Third Discussion

During this period, the dialogue about rhetoric as epistemic resumed. Barry Brummett lamented that “the idea of rhetoric as epistemic has faded as a scholarly inspiration because its followers failed to link theoretical principles to actual criticism or analysis of ‘real life’” (69). He maintained that failure to apply theoretical arguments is “failure to be grounded in a discipline” (70), but that two new sub-disciplines, argument theory and the rhetoric of science, were extending the principles of epistemic rhetoric. Responding to Brummett, Cherwitz and Hikins contended that what was called for was more epistemological musing by rhetoricians, not fewer. What was necessary to resolve difficult epistemological questions was to lay out and debate premises, question terms, and discuss consequences. Farrell entered the discussion, stating that Brummett failed to mention an earlier stage of the history of this issue—the centrality of rhetorical invention. He also asked what would happen if we acknowledged, “that not all positions (covert or overt) are equal in rigor and plausibility” (81). He suggested that rhetorical and communication theory are not identical because rhetoric is a “collaborative manner of engaging others through discourse so that contingencies may be resolved, judgments rendered, action produced” (83). He concluded that Brummett and Cherwitz and Hikins see rhetoric “as something critic-theorists do, rather than something that

is produced in and through other people” (83). Farrell also concluded that there is no reason why epistemic rhetoric should provoke a dispute between theory and practice because: “the real mission of rhetoric as tradition and theory has always been to invent and to enrich rhetorical practice” (84). Scott averred that the “rhetoric as epistemic” claim came from a concern with argument that considered the nature of invention. He objected to explaining the term “epistemological” as asking the question, “How can I be certain?” He wondered: “If rhetoric is simply finding effective words to adapt Truth to those unable or unwilling to recognize it as such can we truly *invent* arguments?” (301). He proposed that theoretical work go forward in different areas including “the further development of invention on the grounds that argument is more fundamentally substantive than formal” (302).

Cultural Critique

In this decade, many composition theorists began to advocate work in cultural studies as a way of theorizing the cultural function of written discourse. Some of these advocates offered inventional strategies to guide cultural critique. In “Composition and Cultural Studies,” Berlin created heuristics for a composition course that focused on cultural studies. These analytic guides combined the methods of semiotic analysis with those of social epistemic rhetoric in order to study the relationship between signifying practices and the structuring of subjectivities, such as race, class, and gender. The three acts that he proposed as a heuristic guide were: 1) locating binary opposites in texts; 2) discovering denotation and connotation that involve contestation; and 3) invoking culturally specific patterns (51). In “Marxist Ideas in Composition Studies” Patricia Bizzell maintained that cultural critique should include positive analysis. She argued that engaging students in Freirian critical consciousness entails studying how meaning-making processes are culturally constituted. She called attention to Fredric Jameson’s point that in addition to demystifying ideology, instructors need to engage in “utopian” analysis and that analysis needs to be both deconstructive and constructive, thus incorporating ethical commitments. As a model, she described Jameson’s three-part interpretive process: the study of forms, which reveals that symbolic configurations grow out of changing social pressure; the study of ideologies, which views the text as an utterance in the discourse of a particular class; and the study of discourse which reveals the way social classes struggle for

discursive hegemony (56-57). (See also John Schilb, "Cultural Studies, Postmodernism, and Composition"; Diana George and Diana Shoos; John Clifford.)

Invention and Civic Discourse

In the 1990s, theory and research were also directed toward the role of discourse in the public realm. In 1991, Thomas Farrell argued that rhetorical practice allows anyone to participate effectively in public discourse by exercising practical wisdom in real-life settings where matters are in dispute. He asserted an inventional function for enthymemes (194-95), claiming that "rhetoric is practical reasoning in the presence of collaborative others" (189) and its "whole emphasis is toward action and the agency of others" (188). Farrell's 1993 *Norms of Rhetorical Culture* aimed to "rethink practical reason rhetorically, through its characteristic *manner* of engaging collective thought" (225). His examination of practical reason concluded that "to the extent that we envision at least the possibility of a rhetorical practice which might be informed by a sense of justice, solidarity, the particularity of audience interest, the forums of distance and disturbance, and the critical publicity of judgment, a rhetoric informed by practical reason remains a live civic option for our age" (229). He also made strong claims about the function and importance of inventional heuristics:

the formal technai of rhetoric may be able to generate new dimensions of practical consciousness while working within the received opinions, appearances, and conventions of everyday life. This inventional process . . . typically involves an intersection between the rhetorical speaker's suggested interpretive horizon and the audience's received opinions, cultural norms, or [. . .] conventions and rules. (257)

He thus argued that invention could be both topical and enthymemic. He also demonstrated how rhetorical practice could be inventional because it recombines and individuates received opinions and convention in order to interrupt everyday policy and practice (273). He also refocused attention on the role of exigence in the rhetorical situation, which, he suggested could take the form of a disturbance or a contested issue or perspective (287). He concluded that rhetoric is "more

than the product, more even than practice; it is the entire process of forming, expressing, and judging public thought in real life” (320).

Others have conducted research on the practices of those writing public discourse. For example, Jay Satterfield and Frederick Antczak, in “American Pragmatism and the Public Intellectual: Poetry, Prophecy, and the Process of Invention in Democracy,” described inventional theory in the pragmatic tradition, as post-foundational, as politically effective knowledge constructed in a public space. Haixia Wang examined the discursive construction of the Tian’anmen Square incident in the *People’s Daily*, the official Chinese newspaper. Karen Dwyer analyzed the way writers for Amnesty International construct the subject positions of international discourse publics and human rights activists. Karen Griggs conducted an historical case study of the complex authorship of an environmental policy. Thomas Moriarty studied the role of discourse in the peaceful removal of apartheid in South Africa. See also Martha Cooper, *Analyzing Public Discourse*; Gerard Hauser, *Vernacular Issues: The Rhetoric of Publics and Public Spheres*; William Craig, *Public Discourse and Academic Inquiry*; Manfred Stanley, “The Rhetoric of the Commons: Forum Discourse in Politics and Society;” and Paul Collins, *Community Writing: Researching Social Issues Through Composition*.

Feminist Invention

During this period, feminist studies paid some attention to women’s inventional practices. Scholars such as Carol Gilligan, Nell Noddings, and Deborah Tannen investigated women’s ways of knowing and communicating. Describing creativity and communication as a “situated, embodied process,” Philippa Spoel argued that “a feminist approach to embodied rhetorics opens up possibilities for re-integrating bodily emotional ways of knowing into the process of invention” (201-2). Marianne Janack and John Adams discussed two presuppositions of feminist standpoint epistemology: the one who theorizes is a prime criterion for evaluating theories and one’s social position influences one’s theorizing (215). This research has been applied by rhetoric and composition scholars like Elizabeth Flynn, Karyn Hollis, Elizabeth Daumer, and Sandra Runzo, and Lillian Bridwell-Bowles, who have outlined various models of women’s ways of composing: playing with language; using language close to the body; personal and emotional discourse; writing personal narrative over argument; foregrounding

concrete particularities instead of abstract generalizations; emphasizing the nonlinear, associate, and inchoate as opposed to the hierarchical and argumentative; and viewing persuasion as the construction of matrices or wombs rather than an exercise of force. Feminist scholars have also advocated specific inventional strategies such as journaling (Cynthia Gannett); collaborative planning (Lisa Ede and Andrea Lunsford; Linda Flower, 1994); dialoguing and interviewing for ideas (Janice Hays); naming oneself through women's narratives instead of being defined by others (Daumer and Runzo; Bridwell-Bowles); and playing the believing game as connected learning (Hays). This work has been critiqued at a number of points. Diana Fuss, Teresa de Lauretis, Joy Ritchie and Gesa Kirsch have charged models like these with essentialism, arguing that they obscure differences in race, class, sexual preference, and ethnicity. Jarratt had pointed out that some models of feminism overstress the avoidance of conflict ("Feminism"). Evelyn Ashton-Jones has suggested that some feminist pedagogies offer an uncritical emphasis on collaboration. Finally, Janice Hays has expressed concern that some feminist pedagogies focus on less complex forms of reasoning.

Another area of feminist research that bears on invention is revisionist historiography. In "Border Crossings: Intersections of Rhetoric and Feminism," Lisa Ede, Cheryl Glenn, and Andrea Lunsford discussed the rhetorical canons of invention and delivery, pointing out that they are "hardly natural methods but rather socially and historically constructed—and constructing—language games [. . .constraining and shaping] both who can know and what can be known" (411). They asserted that feminists have to challenge traditional understandings of the rhetor and what counts as knowledge, particularly the public/private distinction that has devalued personal and lived experience. Women should also include the intuitive, paralogical, and thinking of the body as sites of invention (412-413). See also Barbara Biesecker, "Coming to Terms with Recent Attempts to Write Women into the History of Rhetoric;" Miriam Brody, *Manly Writing: Gender, Rhetoric, and the Rise of Composition*; Cheryl Glenn, *Rhetoric Retold*; Catherine Hobbs, *Nineteenth-Century Women Learning to Write*; Susan Jarratt, "Performing Feminisms, Histories, Rhetorics;" Andrea Lunsford, *Reclaiming Rhetorica*; Louise Phelps and Janet Emig, *Feminine Principles and Women's Experience in American Composition and Rhetoric*; Jane Snyder, *The Woman and the Lyre*; Christine Sutherland and Rebecca

Sutcliffe, *The Changing Tradition: Women in the History of Rhetoric*; and other women writers in rhetorical history in Chapter 3.

Inventional Diversity

Several investigations of racial and ethnic discursive practices bear on rhetorical invention (e.g., Beverly Moss's collection of essays on how literacy is achieved in different communities; Victor Villanueva and Mike Rose's personal narratives about literate ways of knowing; Jeanne Smith's account of the role of narrative among Lakota students; Villanueva's discussion of the distinctive features of Hispanic/Latino writing; and Jacqueline Jones Royster's study of the tradition of black feminism among nineteenth- and early twentieth-century black women). Henry Louis Gates, Jr. extensively analyzed what he termed conscious rhetorical strategies: signifyin[g] as the master black trope, subsuming multiple subtypes such as talking smart, putting down, playing the dozens, shagging, and rapping.

More on Hermeneutics

During this decade, attention continued to be paid to hermeneutics and invention. In 1997, Alan Gross and William Keith edited a collection entitled *Rhetorical Hermeneutics: Invention and Interpretation in the Age of Science*. A central issue in the essays was the binary between production and interpretation—heuristics and hermeneutics. In the initial essay, Dilip Gaonkar argued that classical rhetoric gave priority to the “rhetor as (ideally) the conscious deliberating agent who chooses and discloses the capacity for prudence, who invents discourse that displays an *ingenium*, reducing the agency of the rhetoric to the conscious and strategic thinking of the rhetor” (26-49). In contrast, he asserted that contemporary rhetoric “extends the range of rhetoric to include discourse types such as scientific texts and gives priority to rhetoric as a critical/interpretive theory“ (26). Concluding that contemporary rhetoric has moved from a vocabulary of production to a vocabulary of reception, he wondered:

Is it possible to translate effectively an Aristotelian vocabulary initially generated in the course of “theorizing” about certain types of practical (praxis) and productive (poesis) activities delimited to the realm

of appearances (that is, “public sphere” as the Greeks understood it) into a vocabulary for interpretive understanding of cultural practices that cover the whole of human affairs, including science? (30)

Several authors in this text debated Gaonkar’s production/interpretation binary. Michael Leff critiqued Gaonkar’s equivocal view of agency, arguing instead for a notion of agency as the “circulation of influence, something that remains fluid as one positioned subject engages the work of another, alternating the work while being altered by it” (94). Leff pointed out that classical *imitatio* was not the mere reproduction of something in an existing text but rather a complex process that allowed texts to serve as resources for invention, thus permitting interpretation to play a role in the formation of rhetorical judgment (97). Deirdre McCloskey critiqued Gaonkar’s lack of evidence from the works he discussed, his lack of familiarity with research in the philosophy of science since 1934, and his case of “theory hope.” Carolyn Miller challenged Gaonkar on a number of points. She maintained that production and interpretation are not mutually exclusive, and she pointed to the inconsistency in his claim that our vocabulary is primarily Aristotelian and at the same time “fashioned for directing performance” (Gaonkar 32). She also questioned Gaonkar’s historical analysis, arguing that the classical tradition is not as univocal as Gaonkar would have it. She also suggested that the idea of author as subjective origin was more indebted to modernism than to pre-Enlightenment humanism. (See also Gross, “What if We’re Not Producing Knowledge?”)

In 1989 and also in 1999, Thomas Kent proposed a paralogic rhetoric in which both discourse production and analysis are hermeneutic acts that, he claimed, cannot be codified or learned. These acts, he asserted, are dialogic—open-ended and nonsystematic.

Review: Diversified Invention

In this third period, work on invention dispersed into many sites. Scholars investigated the role of discourse in the construction of knowledge in the disciplines, including their inventional practices. Studies in cognitive invention continued, leading to socio-cognitive theories of rhetoric. Scholars influenced by critical rhetoric and social construction, deconstruction, poststructuralism, postmodernism, and cultural

studies critiqued the notions of unified coherent subjectivities and individual agency, theorizing that discourse constructs writers. They argued for social conceptions of invention and introduced collaborative practices. Others, propounding the importance of cultural critique, developed inventional strategies to investigate cultural codes, signifying practices, and ways in which students and others are constructed and commodified by race, class, and gender. Some theorists rejected the use of general strategies and advocated local heuristics based on the role of discourse communities in the construction of texts and knowledge. Multiple writer positions were advanced, encompassing gender, race, and class differences and expanding well beyond students in introductory writing classes to writers in the disciplines, the workplace, and the public sphere. Conflicts between the hermeneutic and heuristic escalated. Debates about rhetoric as epistemic continued. Invention migrated to various sites of study, e.g., feminism and diversity.

Invention in the New Millennium

In 2000, Victor Vitanza, in “From Heuristic to Aleatory Procedures; or Toward ‘Writing the Accident,’” argued that the conditions of rhetorical invention are changing and the foundation—*stasis* theory—is dispersing, even imploding (188). He discussed the conditions for “thinking” in terms of a third term, the possible (that has been excluded by the terms of the ideal and the real). These imminent conditions for “aleatory procedures, with their general economy of excess are emerging through the shift from literacy that Ulmer calls ‘electracy,’ a shift to ‘chance as hazard or to the monstrous’” (189). He pointed to Ulmer’s theory of heuristics (heuristics + heretics) involving ubiquitous anagrams. This new theory of invention entails grammarology, exploring the “non-discursive levels—images, puns, or models and homophones—as an alternative mode of composition and thought applicable to academic work, or rather play” (191). Vitanza contended that this was a theory of invention defining “how ‘to play’ on the road to Serendip(ity)” (192). Heuristics’ principle of invention operates “not by way of negation but by way of nonpositive affirmations” (193). Ulmer offered an acronym, CATt (Contrast, Analogy, Theory, Target, and tale) as an antimethod, which Vitanza elaborated. He also explained a second heuristic, anagrammatic writing, facilitated by Internet Anagram Server/I, Rearrangement Servant, which he

called an Invention-Discovery Machine. As Vitanza stated, these are aleatory practices based on a postmodern epistemology. He does not discuss their social nature or purpose.

In 2002, Janet Atwill and Janice Lauer's edited collection, *New Perspectives on Rhetorical Invention*, offered a range of points of view on rhetorical invention, some of which are represented in the essays discussed below. Lauer, in "Rhetorical Invention: The Diaspora," illustrated that studies of invention, rather than focusing directly on it, migrated into a number of areas in Rhetoric and Composition: writing in the disciplines, writing across the curriculum, cultural studies, feminist studies, technology research, and genre studies. She concluded that this scholarship treated invention as localized to these specific sites and as largely theoretical with only occasional mention of the implications for practice and pedagogy. Debra Hawhee's "Kairotic Encounters" examined the postmodern critiques of traditional rhetorical conceptions of subjectivity and invention, especially the dual conception of invention as discovery and creation of a unified subject. She argued for reconceiving invention and subjectivity drawing on sophistic notions and "invention-in-the middle, an idea from the work of Deleuze and Guattari. Arabella Lyon, in "'Rhetoric and Hermeneutics: Division Through the Concept of Invention," discussed the disappearance of rhetoric's public function because of privileging interpretation over rhetorical production. Yameng Liu, in "Invention and Inventiveness: A Postmodern Redaction," addressed the discovery/creation binary, examining the modernist values that bolster this opposition and proposing the term, *inventiveness*. Louise Phelps, in "Institutional Invention: (How) Is It Possible?" pointed out that rhetorical invention helps us to understand the difficulties of institutional change in academia, suggesting that academic institutions can fashion invention as a practical art. Linda Flower and Julia Deems, in "Conflict in Community Collaboration" wrote about the use of heuristics in community problem solving, especially scenarios, in a rhetoric that is generative and non-adversarial. Haixia Wang, in "Invention and the Democratic Spirit in the Teachings of Zhuang Zi," explained that Zhuang Zi, a Chinese philosopher, considered invention to be in analogical and dynamic relation with context.

Michael Carter's *Where Writing Begins: A Postmodern Reconstruction*, as its title indicates, addressed the earliest aspect of invention: beginning to write, the act that *stasis* in classical rhetoric was intended

to guide. Carter noted that whereas stasis theory suggested a starting point for a chronological process of rhetorical invention, he questioned the notion of a chronological starting point for any act of writing and, further, the very idea of a beginning in the chronological sense. He argued that any point we could designate as a beginning of writing is ultimately arbitrary and does not help us determine where writing begins. Carter redefined beginning in terms of an ancient Greek philosophical conception of beginning, *archê*, the point at which opposing forces intersect and generate the potential for creativity. He used this alternative understanding of creativity as a basis for questioning the standard academic division between creative and, by inference, not-creative writing, by which the former devalues the latter. Carter also deployed Whiteheadian metaphysics and process theology to establish an understanding of creativity that is ongoing and discontinuous. He linked that understanding to invention, in particular the spatial metaphor of *topos* which implies a threshold or border between knowing and not-knowing, the familiar and the unfamiliar. For Carter, then, writing is creative not when it produces a special “literary” object but when it places the writer on that borderline of inventive openness, which he associated with beginnings.

In 2003, Anis Bawarshi, in *Genre and the Invention of the Writer: Reconsidering the Place of Invention in Composition*, defined invention as the “site in which writers act within and are acted upon by the social and rhetorical conditions we call genres—the site in which writers acquire, negotiate, and articulate the desire to write” (7). She claimed that writers “write within genres and themselves are invented by genres” (7). Describing the ecology of invention, she maintained that genres enable us to situate “a writer’s motives to act within typified rhetorical and social conditions” (11). She also characterized genres as “situated *topoi*” (13) and argued that there is room within genres for transformation and resistance (93).

Chapter Synopsis

All of these inventional theories since the 1960s have rested on epistemologies ranging from phenomenology to postmodernism. Theorists have also differed over what acts comprise invention (e.g., initiating discourse, exploring subjects and situations, constructing texts or arguments, and interpreting texts). Further, they have disagreed over the

purposes for these inventional acts, positing goals such as raising questions; reaching self-actualization; constructing new understanding, meaning, or judgments; finding subject matter; supporting theses; critiquing cultural codes; learning and creating disciplinary knowledge; interpreting texts; and playing. They have also argued over the types of strategies, tactics, heuristics, or guides that best facilitate invention, including the Pentad, the tagmemic guide, the classical topics, freewriting, the double-entry notebook, journaling, collaborative planning, cultural code analysis, and playing with anagrams. As the decades have passed, scholars have disagreed more intensely over whether hermeneutics or heuristics were more effective as inventional approaches. Finally, over the years, conceptions of the subject positions writers occupy have become more complex and sites of inventional activity and its facilitation multiplied. Thus, debates over invention's nature, purposes, and epistemologies have continued.