

**INTRODUCING THE LIBERAL ARTS THROUGH
INTERDISCIPLINARY INQUIRY:
PROPOSAL FOR AN INTEGRATIVE
GENERAL EDUCATION EXPERIENCE**

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We can deliberate about things that are in our power and can be done.
Aristotle, Nichomachean Ethics

The beginning of the contemporary undergraduate's study should involve him in the inquiry experience, encompassing library and field research, for several reasons which include both cultural and psychological evidence that a student is more successful in integrating the purpose and abilities of a Liberal Arts education when he is an agent in the direction of his own studies. The inquiry should be interdisciplinary, for the student has not yet reached a maturity of disciplinary knowledge that will allow specialization in a depth that permits self-direction. This imperative will appear strange to many who are proficient in higher interdisciplinary research, that is, the inquirers who have mastered several disciplines and employ them in their thought, for to be interdisciplinary normally connotes a complex integration of methodologies. As Jonathan Broido expresses it, an interdisciplinarian must be able to describe the explanatory utility, predictive power, and information-theoretic measures of the fields that he employs.¹ Those academics who are suspicious of interdisciplinary thought and inquiry, accusing it of conceptual confusion, lack of intellectual rigor, and in its undergraduate pedagogy, an impediment to the development of disciplinary competence, will be equally puzzled by a claim that freshmen should begin their orientation to the Liberal Arts through interdisciplinary inquiry.²

My presentation of a freshman program in interdisciplinary inquiry is based on an understanding of the concepts of questioning and methods of library and field research "generic" to the social sciences and the humanities,³ yet

at a level of simplicity prior to the higher level of disciplinary organization that is accomplished gradually in the upper levels of undergraduate study, and polished in graduate work. I will present a view of interdisciplinarity and inquiry that focuses upon developmental principles of thought which must be realized before sophisticated disciplinary and interdisciplinary inquiry can be undertaken. The first section of the study will develop theoretical assumptions of cognitive development, and of the inquiry process, upon which the outline of the freshmen studies program, in the second section, is based.

An interdisciplinarian is always skilled in several disciplines. He is distinguished from the disciplinarian by his willingness and ability to bring questions, research methods, and data analysis to his work that are drawn from these several disciplines. The disciplinarian may be quite cognizant of the limits of his particular field, and the value of the other fields in augmenting problems he addresses, but the disciplinarian will not actively entertain these questions in his work, nor venture beyond the boundaries of research methodology that are customary for his domain. Such suppression of questioning and research exacts a penalty upon the disciplinarian, even one brilliant in his field, and sensitive to the design of other fields. The penalty touches upon the breadth of his vision of the world, the cogency of his knowledge, and the nature of his own response to that knowledge. One may know his own limits and values, and what others may do, but unless one participates in the practice (praxis) of actively questioning and seeking knowledge in a manner that reflects questions and methods of inquiry from disciplines whose horizons touch upon the diverse factual domains every individual experiences, he will be limited in the knowledge of both his own human experience and in the implications of his own research. These domains of factual experience are broadly represented by the humanities, that study the expressions of the human spirit and intellect, the social sciences, that study the behavior, institutions, and cultural artifacts of human groups in an effort to comprehend laws and norms that explain individual action, and the physical and biological sciences, which explore the composition, structure, and processes of inorganic and organic nature. The mental, physical, cultural, emotional, sensational, and spiritual facts derived from the perspectives and methods of inquiry from these domains enrich the inquirer in an active knowledge (Erlebnis) of the corresponding realms of his own person.

Reflection upon evidence gathered from the several domains of human experience and nature inevitably bring self-knowledge as the knower weighs the differing facts that touch upon the issue he investigates. An insight into the human condition seen from the perspective of biology is complemented or challenged by one from the perspective of psychology. In the dialectic of diverse domains of evidence, the knower increases his knowledge of the structure, composition and process of knowing, and thereby his own possibilities of being an active knower in the world. With each encounter with the human condition and nature from a varying avenue of inquiry, he becomes himself somewhat different in abilities and attitudes as they are exercised in the world. Perhaps the boldest assertion of the distinction between the disciplinarian and the interdisciplinarian

that we will make is based upon diversified knowledge and its impact upon the knowing person. In his active syntheses, through the conduct of inquiry, the interdisciplinarian establishes a holistic view of human experience in the cultural and natural world that incrementally, with every gain in knowledge individuates him as a singular person. Individuation has implied becoming more of oneself through the successive acts of knowledge that enable more of one's total being to live consciously in the world, since the concept was first introduced by scholastics, such as Duns Scotus and Thomas Aquinas.⁴ As Aquinas stated of an act that seeks knowledge, it is not so much an act of doing as an act of becoming something different oneself. It is a self-modification brought about by the objective possession of something other than oneself.⁵

This growth in one's own person is, potentially, a growth in the understanding of other persons, as well, for one sees the human condition more fully in its diversity. The interdisciplinarian is thereby equipped to comprehend the ground of understanding of someone who inquires from viewpoints different from his own, given some participation by him on that ground. He learns modes of demonstration that can communicate even the specialized knowledge of a particular field in terms that can be comprehended by individuals unfamiliar with that field, for he has a broad-based knowledge and vocabulary that encompasses the manner in which specialists in other fields ask questions, in his search for a personal, holistic understanding, he develops a common vocabulary that also enables him to translate his findings to the world of everyman. As Aristotle argues in the *Topics*, in order to demonstrate the truth of a particular science, the idea or principle must be stated in the principles of several sciences, so that specialists in other fields will see the meaning and significance. Moreover, in casual discussions with non-specialists, an effort must be made to keep the demonstration upon the ground of understanding of the lay person in order to be able to point out his errors in reasoning, and guide him to appreciation of the facts in terms that are integrated to his present understanding.⁶

A cogency of argument, and the breadth of vision that supports it, are acquired then through incremental steps of reasoning from several disciplines. One builds gradually a system of understanding, a Weltanschauung, that is articulated in a series of theses about experience, each of which reflects the particular perspective of an established discipline. However, these theses are integrated into the whole vision in a manner that influences each single thesis so that one's formulation in each is a creative synthesis that reflects the implicit or explicit presence of other perspectives. One's theses always have a distinct originality because of the personal design one has realized in his successive understandings. Together, they all reflect a system of understanding, a design of one's own construction, arrived at through the varied questions that lead one into, and through the acts of inquiry. Immanuel Kant spoke of this system of understanding in each thinker as an architectonic that in its overarching design provided a standard of idea that informed the significance and implications of any empirical investigation. He differentiated between the overarching architectonic and the empirical systems followed in the particular moments of an investigation.⁷

Kant was a thinker who must be considered a model of the interdisciplinary incremental gains of intellect and self-knowledge described above. He borrowed from anthropology, as it existed in his day, and biology, in order to demonstrate his understanding of the transcendental mind and its operation. He was quite aware of the necessity for the self-developed theses, and the larger architectonic arrived at through successive questioning. He stated that unless one engaged in the intellectual practice of creative questioning beyond one's inherited discipline, one would suffer in one's humanity as well as his thought. He called the inherited mode of questioning provided by a discipline a historical system.⁸ The thinker who only adapts the historical system, rather than integrating empirical facts in a cogent, self-aware manner into his self-constructed architectonic, is "a plaster-cast of living man," whose accomplishment is empty of significance.⁹ A self-developed system, as we will see, is the product of naive and educated questions, as in the case of Kant spanning decades, which inevitably embrace the perspectives of several divisions of knowledge. The interdisciplinarian becomes so incrementally over years of formulating and following diverse questions that are the core of the guiding idea he brings to any project. His architectonic will include a greater diversity of empirical fact than the disciplinarian because of its multiplicity of perspective tested in his own experiences, and provide, consequently, a broader vision of the task at hand.

It is difficult to offer any historical person as a model of the ideal-type of interdisciplinarian, for we are fallible creatures of our cultural matrix, and no single individual can rise completely above the incompleteness of the questions, and the biasing factor of any research methodology employed. Moreover, Kant himself was a thinker within the inherited paradigm of Wolff and other deductive forebears. Who can create free completely from disciplinary tradition? Nevertheless, I will suggest that thinkers such as Werner Heisenberg and Sigmund Freud can be seen as examples of the intellectual virtues of interdisciplinarity, even in their limitations. Heisenberg's "autobiography of an idea" wherein he traces the sources from humanities, social sciences, and physical and biological sciences that led him to his own architectonic, and its consequent discoveries in Physics, is a text that shows the extreme importance of Aristotle's admonition in the *Topics*.¹⁰ Casual conversations, and dialogues with specialists in other fields, helped him to clarify questions he gradually formulated within and beyond his field, questions which sharpened his awareness of Physics from within and without. As he states in his Preface to *Physics and Beyond: Encounters and Conversations*: "Science is made by men, a self-evident fact that is far too often forgotten. If it is recalled here, it is in the hope of reducing the gap between the two cultures, between art and science. The present book deals with the developments of atomic physics during the past fifty years, as the author has experienced them. Science rests on experiments; its results are attained through talks among those who work in it and who consult one another about their interpretation of these experiments. Such talks form the main content of this book. Through them the author hopes to demonstrate that science is rooted in conversations."¹¹ Sigmund Freud broke through the diminution of personality imposed upon mentally ill patients by the psychiatric

paradigm of the nineteenth century with the help of literature, philosophy, aesthetics, and questionable movements within his own field, such as hypnosis and Breuer's "talking cure," which stressed the singular subjectivity of the individual.¹² He gradually formulated questions about human subjectivity, and its role in the human condition that became an architectonic which helped him see the complex, subjective dynamics of the unconscious mind and describe the individual patient in a depth never before achieved in medicine. His conversations with individuals within his field and in other fields were critical for his own changing questions from which his architectonic was built.¹³

The brilliant disciplinarian accomplishes striking factual discovery and significant syntheses within the range of problems and explanatory hypotheses customary to his field, but his questions limit his incorporation of the perspectives of other fields into his own work, and thus limit his integration of the other factual dimensions of experience into his problem or project. His architectonic is narrow, and the empirical facts he gathers often exclude data which would enrich his own field. Freud's inability to convince Joseph Breuer that the latter's aborted "talking cure" therapy demonstrated the causal role of ideation in mental illness is evidence of how the disciplinarian can deny pertinent information because of his own limited, disciplinary architectonic of acceptable theses.¹⁴ Breuer's refusal to follow his own innovative idea puzzled Freud, and in later years has been explained as Breuer's fear of his own counter-transference to Anna O., the patient with whom the first therapy that probed the "subjective" depths of personality was developed.¹⁵ The acquisition of new knowledge, as Thomas Aquinas asserted, is more than an act of doing, it is an act of becoming something different oneself. Had Breuer followed his method he may have realized the circumstances of his attraction to Anna O., growing thereby in self-consciousness, and consequently in his integration of new humanistic insight into his praxis. There is a risk in every act towards knowledge, for one must become somewhat different in his feeling, thinking, and acting in light of that gain. Moreover, a question takes time to answer, and in the period of uncertainty, one must continue to go forwards, often through fears generated by the uncharted territory.

There is an adventure in knowledge for the inquirer who has matured with an education that encourages self-formulation of questions and self-direction in the search. What may be called a scientific story is lived by that individual as he seeks in each problem entered the realization of what Immanuel Kant designated as the three conditions each articulate idea must satisfy: 1) the knowledge must be cogently related to the thinker as an experiencing individual; 2) the knowledge must be related to the manifold of objects considered in the field of experience; and 3) the knowledge must be translatable to all things in general, even beyond the immediate field of experience.¹⁶ In other words, the individual must undertake the classic journey that involves him in the trials of life, widening his horizons, that journey depicted by Dante's *Divine Comedy*, Cervantes' *Don Quixote*, Bunyan's *Pilgrim's Progress*, Goethe's *Wilhelm Meister*, Dickens' *David Copperfield*, and the more modern, explicitly scientific journeys of Werner

Heisenberg's *Physics and Beyond*, and Margaret Mead's *Blackberry Winter*. The first naive questions which disturb the inherited framework of thought, introduced with an unexpected encounter with new elements beyond one's home territory, leads to experiences that inevitably promote new questions and further experiences, maturing the questioner in the process. Each answer is triple-edged: the inquirer comes to know his own person more profoundly as he sees the relevance of the answer to his life; the life and natural situations in which he stands are amplified in their complexity and meaning; the historical experience of the individual, and consequently the world he has known, and the world he expects to encounter, is enriched and widened in its range.

Inquiry originally had such a meaning of empirical adventure in the ancient Greek world where the concept was first formulated. The Pre-Socratics developed the concept of historia to explain the integral relation between the questioner and the laws of human and physical nature. Historia meant inquiry into particulars that arrived at the universal laws of which they were part; it meant also the history of events that progressed according to those laws; and, more importantly for the challenge to the questioner, it meant his relation to life in the light of those laws.¹⁷ As inquiry was formalized into research, study of human and natural phenomena guided by more rigorous methods of investigation, the Greek thinker maintained his sense of participation in life according to the laws he identified. The researcher lived in search of the truth, and shaped his personal character according to his conceptions of that truth. As Heraclitus put it: "Man's character is his fate; the waking have one common world, but the sleeping turn aside each into a world of his own."¹⁸ By engaging in historia one could develop an understanding of the world and oneself that was grounded in certain knowledge, a knowledge that was true for every human. Plato's and Aristotle's attacks on the over-specialization of the Sophists was not in their search for laws, rather in their neglect of the implications of their study for their own life in the world. Human meaning was rooted in an understanding of physis, human and physical nature; as one understood nature, one understood what was morally correct. Socrates demonstrated in his life all of these precepts; we are quite familiar with the courage he displayed on his empirical adventure.

The implications of historia for the contemporary student are the same as they were for Heraclitus and Socrates: each person must develop through empirical inquiry and research a sense of the laws of human and physical nature which guide his spiritual and organic existence, committing his own involvement in life to that understanding. Educators must help the individual to see the earnestness in action implied in the pursuit of knowledge. We live in a world that justly cautions us that any gain in knowledge must be viewed as a probability, open to revision, and more study. However, a "relativist" view of reality does not preclude an earnest commitment to these very precepts, which require on-going research; the moral implications of the position stress openness to the work of others, and the significance of our interdependent relation to the thought of others. Whether we still feel that one certain unified theory of physis is possible,

or hold that we are epistemologically excluded from such certainty, every reasoned position has its moral guidelines for life in the world.

Historia has in its original conception also the notion of the scientific "story" of life.¹⁹ The myths included in Plato's dialogues were his way of unifying the spiritual meaning that enveloped every particular truth. A story enables the teller to see what Aristotle later called the "formal cause" of particular phenomena and events. The finished shape or form towards which things develop to become what they truly were must be kept in mind as one related to them.²⁰ The large stories of Marx, Freud, and Darwin still offer many of us a sense of the formal cause of particulars. Even the "relativist" story is a formal cause. The contemporary student must be helped in forming such a "story," a sense of the formal cause of phenomena, as he pursues his inquiry in various fields. Even when such "stories" must change to accommodate facts, the presence of such a synoptic vision for the individual allows a change that is coherent across the many dimensions of his life implied by the facts.

Perhaps the value of a coherent theme that links diverse areas of facts, and integrates one's own life in an informed manner to those facts, physically and spiritually, is best seen in the reemergence of historia as a guiding principle during the Italian Renaissance. The Italian Renaissance created a view of the inquiring individual which still is one of the strong roots of modern humanism and science. We see in Dante's *Divine Comedy*, in every canto, the inductive exploration of human and environmental physis to ferret out the natural and moral laws that can provide the individual with certainty of his place and next action. Dante was "rediscovered" in the era of the Enlightenment, and has remained significant in our contemporary age, not because his thematic understanding was right, but because he exemplifies the researcher who fashions a life according to an earnest commitment to self-discovered law.²¹ His vision of every moment fascinates the contemporary thinker even yet because life was seen through his eyes moment by moment, with a keen sense of the interrelation of all aspects of the visual field. He articulated what we call today a coherent Gestalt that saw complex levels of significance in every event in its tangible signs. Several generations after Dante, Leon Battista Alberti gave theoretical clarity to this vision of moment to moment life as a unified Gestalt with complex import in his treatise on painting.²² Alberti called his theory istoria, a clear relation to the Greek concept. The three major principles of istoria were: 1) every painting must have a unified theme which orders all particulars; 2) the painting should stress the empirical tangibility of human and physical nature, the factual rendering informing the theme; and 3) the visual field should be true to human perception, so that the viewer of the painting could, as it were, see the meaning of the painting as he would see any event as he perceived it in life. Alberti's theory led to the deep extension of three dimensionality that gave the visual and spiritual field of the painting a potential empirical infinity.²³ He allowed by his theory the singular interpretation of common themes by individual artists. Each artist told a "story" that gave his individual imprint to cultural tradition. Each artist was challenged to

integrate the singular meaning of his own life in each communication of the laws that governed himself and all other humans.

Through historia, every separate inquiry can help the inquirer become cognizant of his own values and modes of thought. His individual questions are gradually recognized as threads in the whole fabric of his life. To paraphrase George Eliot, 'Every earnest search for knowledge within the world by an individual is also an earnest search within himself.' The inquirer learns with the certainty of his cumulative search his capabilities as well as his limitations. He comes thereby to choose his pursuits more self-consciously, and more self-directedly. As Aristotle stated, "We deliberate about things that are in our power and can be done."²⁴ As we turn to a program that introduces inquiry and research, and a life of self-direction for the undergraduate, historia will be an integrating concept, a concept that, as we will see, necessarily implies interdisciplinarity in the empirical adventure of the Liberal Arts.

The introduction to higher education through interdisciplinary research discussed in this section is a two semester course that conceives research in that middle-ground between inquiry and specialized disciplinary methodologies where the inquirer may still feel at liberty to ask naive questions, and explore strategies of gathering evidence that reflect the formal reasoning methods he has developed as a natural human function since adolescence. The explication of the course phase by phase will hopefully convince the reader that the experiences of the student do constitute a research that is very important in securing a love of the path he may follow in more formal disciplines. The gains he will make in the consciousness of what research means will become evident as the content and processes of the two semesters are described. His gains in knowledge of himself, as I hope to demonstrate, could not come in as explicit a manner in any array of disciplinary courses.

With historia as the integrating concept, one may view the pedagogy of the interdisciplinary course as even more important than its content. If there is a weakness in conception, it is in its stress on process, which I will attempt to keep in balance with the kinds of information that a freshman should be given about culture to provide a foundation for further study. Process is stressed in inquiry because historia demands a coherent working system of understandings in the individual which help him integrate the meaning of separate factual studies into a world view, and help him integrate his own sense of self into that world as a potential contributor. One of the contemporary labels for this emphasis on the learning process of the individual is person-centered teaching. Those who promote such teaching share a fundamental view of inquiry with the Greeks of the Classic Age, the Renaissance humanists, and the thinkers of the Enlightenment--the competent individual is the center of knowledge in his abilities of reasoning and self-expression, rather than specialized fields of study that must be mastered. Each of these preceding ages added to our knowledge of complex individuality because of this person-centered perspective where the process whereby knowledge was attained was of more moment than the information

acquired, Kant defined the Enlightenment era as a cognitive and conative exercise of skills, a process, that placed the individual in an adventure of knowledge:

Enlightenment is man's release from his self-incurred tutelage. Tutelage is man's inability to make use of his understanding without direction from another. Self-incurred is this tutelage when its cause lies not in lack of reason but in lack of resolution and courage to use it without direction from another. *Sapere aude!* "Have courage to use your own reason!" –that is the motto of enlightenment.²⁵

The course that follows is chiefly a process experience in skill development and self-direction. Five process variables have been isolated that humanists and social scientists in our era have pointed to as the intellectual, emotional, and behavioral skills that underlie self-direction in inquiry: cognitive ability, cultural aspiration, task motivation, task performance, and locus of control and self-esteem.²⁶ These variables are an anatomy of the competencies of historia, and form the broad goals of the course described below as a whole, and in every class that comprises the whole.

Goal One: The cognitive ability to adapt to and modify new situations.

Most educators see cognitive ability, as measured by intelligence and achievement tests, as the chief variable in student performance and persistence within the educational system.²⁷ What is cognitive ability? Intelligence tests that determine this entity reflect three basic dimensions: the capacity to learn, the ability to think abstractly, and adaptability to new situations.²⁸ It is the ability to think abstractly that is most often tested at the college level in classes where students are placed solely in a response mode to the problems designed by the instructor, in order to encourage self-direction, however, it is the dimension of intelligence that Raymond B. Cattell calls "adaptability to new situations" which must become the major orientation of curricular reinforcement and testing. Problem-solving and inquiry, which carry students through multiple environments, and involve them in both psychological and behavioral dimensions of self will create a movement in them towards historia as a character trait. The student will learn to adapt to, and gradually modify new situations in his knowledge-seeking; every class will become an arena for his self-testing as he is challenged by the need for self-direction.

Goal Two: Identification of the inquiry objectives of each student with his present and potential cultural reality.

Cultural aspiration includes identification with one's culture and a desire to conserve or to improve it. The student has an implicit connection to his state of culture that can further or retard his interest in the educational process, and the subject matter of that process.²⁹ In the course below cultural periods drawn from the Western world, as well as contemporary American history, are emphasized. These cultural foci may be changed to accommodate the background and

interests of the student. It is vital that the student conceive each project of the class as a meaningful exploration of his cultural roots or his present situation in life. Historia can only be cultivated as an inquiry process when the individual invests his identity in the tasks before him.

Goal Three: Each task in the continuum of the course must be understood by the student as meaningfully integrated into his long-term goals in the culture.

John W. Atkinson and Joel O. Raynor have offered evidence that every educational task asked of the student must be related to a preferred long-term goal of that student if he is to invest himself in the task.³⁰ The individual who can formulate the task at-hand in terms that link it to either a future goal, or a step in the development of his own sense of identity, will move towards self-direction with a clarity of purpose that augments the general assignment of the instructor. In order to promote this clarity, the instructor must articulate clearly the objectives of the task in a manner that allows each individual to reformulate the objectives in the light of his present interest and future direction. With each statement of a personal objective, the student places himself within historical time, conceiving his task as a movement forward in that time. The instructor should explain orally and in writing the general objectives for every major segment of the course, and request a series of individual goals from the student that situate him within those general goals and within the objectives of his own life situation.

This self-awareness in the student can be achieved through student conferences, periodic in-class small group exercises, and model cases offered by the instructor. Working with fellow students in the clarification of personal objectives will enhance a sense of citizenship in a community of effort for the individual. Ideally, the class can become a microcosm of the interdependent, yet individual reality within the community beyond the classroom in which the person will transfer the knowledge and self-directive abilities learned in his educational projects. Listening to, and helping in the development of the objectives of other students in a common assignment will breed appreciation in each student for the diversity and interrelatedness of the human community.

Goal Four: The projects asked of the student should stress performance that is self-directed, and be assessed chiefly by the quality of effort rather than the "correctness" of answers.

Otto Rank, in discussing the primary path to mental health in the twentieth century, states that one: "is helped not by more knowing but only by willing, not by knowledge of his fate but by the living of his self-determination."³¹ Each class and major phase of the course should incorporate exercises and projects that allow individual variation in the completion of an assignment. Assignments should be designed as open frameworks which a person's thematic interest and personal question can address. Even in a class that is more lecture oriented, when subject matter is presented to the students as an initial

introduction of its nature, historical importance and meaning, as seen by the instructor, there is time for "naive" student responses within a conductive pedagogical format. The student response is an act of "centering" whereby the student links his own history of interest and perception to the material. It is only a naive response in terms of its unschooled eye in the formal context of the cultural artifact. In the deepest sense of historia the immediate judgment, even in its crudest expression, is taking a relation to the material that enhances its significance for the person.

The assessment criteria for these acts of "self-determination" should focus upon the clarity of intent, the involvement displayed in the oral or written response (determined over time by the norms of self-disclosure, detail and depth of inquiry, and relatedness to areas of interest that touch upon the individual's cultural environment) and the originality of expression, judged by examples brought into arguments and demonstrations that have not been offered by the instructor or the textual materials. The instructor should facilitate small group and class discussions to underscore the "rightness" of every position, differentiating the quality of a position by its thoroughness, clarity, and cogency.³²

Goal Five: The projects asked of the student should enable him to experience a sense of agency, closure, and ownership in what has been accomplished.

The exercises and projects of the course should be designed to enable each student to manage his own progress through the assignment. The steps required should be carefully outlined so that the student can orient himself to his successive accomplishment of the task.³³ In this manner he experiences personal agency, and develops what psychologists have called "internal locus of control."³⁴ Each exercise and project should be planned so that sufficient time and the necessary ability are possessed by the student so that he may achieve some degree of closure. Assignments should be constructed in phases to assure a sense of closure in part, even if the entire assignment is not completed. There must be continual "feedback" built into the classes, based upon segments of assignments, so that the student can know his success or where he strayed in his work. Ownership of inquiry is arrived at through a self-consciousness of work done well, or at a minimum, work that progressed to a point that needs more work. Self-esteem is developed upon a factual ground of real effort within a course that considers agency, closure, and ownership.³⁵

These five goals express the five process variables that lead to historia in inquiry. They are not really isolated in learning, rather they are integrated, well or poorly, in their expression as the student directs himself to the task at-hand. A good integration is furthered by a pedagogy that stresses 1) person-centered learning, i.e. that instruction which elicits the personal interests, values, and agency of the student; and b) interdisciplinarity in the breadth of problems to be considered and the variety of research methods that are introduced to address

those problems. Person-centered learning places the student in a self-directed relationship to the processes and content of what is studied, and is conducive to intellectual and emotional investment by the student in the issues that partake of his immediate life in the culture. We will see that this emphasis involves the variables of cultural aspiration, task motivation, and locus of control and self-esteem in a manner superior to that possible in non-person-centered courses. Interdisciplinarity in problems and methods insures that the student will be exercised in the entire range of cognitive and conative skills which underlie research in the arts and sciences, while supporting the vision of a common world in which the disciplines may cooperate to improve life. Thus, the variables of cognitive ability and task performance are enhanced in what may be seen as a moral as well as a practical sense. The student will learn to see that research has a dimension of citizenship, as well as a gain in specialized knowledge, through his appreciation of the diversity of research required for an improvement of culture and society, and in his exploration of cooperative forms of research among different fields.

I will give a narrative of the course in its sequential phases emphasizing the five process variables of cognitive ability, cultural aspiration, task motivation, task performance, and locus of control and self-esteem at particular phases of the experience, and how these variables further historia in their specific manner. One should keep in mind, however, that all five play a role and are developed in every phase because of the unity of these dimensions in any act of inquiry. The two semester, six to eight credit course,³⁶ is feasible for freshmen, though some who have seen the design question the ability of students at this level to accomplish inquiry that carries one into field research. I have taught freshmen library and field research as well as humanistic cultural analysis for almost a decade according to the methods suggested in this paper. Our freshman program has been evaluated as a model program by the American Association of State Colleges and Universities, and it has been praised for those features that are recorded in the five process goals.³⁷ Because of the free choice of course and sequence allowed students in the public university of the University of Louisville, these freshman courses were never combined into a two semester, mandatory sequence. Thus, I have never offered the course in quite this design, but have taught all the parts to freshmen, I recommend to anyone who might attempt the model offered below that he evaluate his own prior experience with students, and select those features that he feels seem feasible, given his own existing sense of agency and experience. As any model, it is designed to be taken apart, and its configuration varied to suit the conditions at-hand.

The model will be presented first in an overview that suggests approximate time of learning in each phase. This time is based upon my experience with students who ranged in age from 17 to 75 years, and scored between 8 and 20 on ACT exams.³⁸ Some students, of course, moved faster than others, with the ACT being a fairly good predictor. We had a developmental lab in critical thinking to help students with ACT scores from 8 through 14. The overwhelming majority of students, even with ACT scores of 14 or under, were

able to complete library and field research projects in pursuit of meaningfully personal questions in one semester.³⁹ Separate texts for library and field research, designed in a manner that enabled the student to manage his own progress, in an inquiry based upon his own questions, helped greatly in the success we achieved.⁴⁰

First Semester

Introduction to Inquiry: Highlighting the process goals of cognitive ability and cultural aspiration.

Phase One: A generation of naive student questions in relation to cultural artifacts (painting, sculpture, excerpts from literature, historical writing, and scientific experiments) from diverse historical periods, preferably from past centuries.

Time: Approximately two weeks.

Phase Two: The refinement of student questions by 1) formal definition, and clarification of concepts; and 2) reformulation of the questions to suit the objectives, methods and preferred evidence of several academic fields.

Time: Approximately four weeks.

Phase Three: Library research by the student that locates research studies which pursue a similar question to his own in several fields.

Group deliberation of how particular student questions could be formulated in the humanities, social sciences, and natural sciences, and how an interdisciplinary effort could be planned to answer the question from several perspectives,

Time: Approximately four weeks.

Phase Four: The writing of autobiographical cultural history by the student, guided by the questions he has formulated in several fields.

Class discussions in small and large groups of the autobiographies.

Introduction to field research: The student develops a survey instrument, based upon his cultural autobiography, and administers it to individuals who shared his cultural experience in his home, school, and work communities.

Time: Approximately five weeks.

Second Semester

Building and Testing Cultural Models: Highlighting the process goals of task motivation, task performance, and locus of control and self-esteem.

Phase One: The introduction of cultural model building on the bases of the social-economic, political, and religious values of a period of culture; and the interaction of exemplary researchers in the arts and sciences within that period. A major aim is to show the strengths and limits of the researcher as citizen, and the significance of cultural norms in stimulating, setting direction for, and regarding research.

Time: Approximately four weeks.

Phase Two: The students return to library research, tracking the creative careers of scientists and humanists in contemporary American culture who have pursued a question similar to their own.

The students then as a class develop a model of contemporary American culture on the same bases as the model of Phase One. The model emerges from the contemporary lives they have researched, informing their common knowledge of the culture with concrete instances of the interaction of cultural contributors within the stresses of their society.

Time: Approximately four weeks.

Phase Three: There are several options to this concluding phase of individual or small group research.

1) Small groups can form who have similar questions representing fields within the social sciences, humanities and natural sciences. The group designs quasi-experimental and/or experimental conditions for gathering evidence to answer a common question. They are guided in the design by a programmed workbook which helps them with the construction and implementation of survey instruments, behavioral observation, performance or artifactual testing, and cultural interpretation of the data. They seek a trend, rather than what would constitute a valid and reliable answer.

2) Individuals and small groups can develop and implement survey instruments based upon the contemporary cultural model of Phase Two, interviewing researchers in the humanities, social sciences, and natural sciences, to see how accurate their own generalizations are in relation to the researcher; then guiding class discussions of the results.

3) Individuals and small groups can develop cultural models of historical periods following the Phase One and Phase Two models, but stressing the questions most significant to them in highlighting the weaknesses and strengths

of the particular culture, and the breakthroughs and limitations of the exemplary researchers they include.

Time: Approximately seven weeks.

Discussion of the Two Semester Course and Its Phases: Integrating Process Variables Through Person-Centered Learning and Interdisciplinarity

First Semester

Introduction to Inquiry

The first phase of the introduction stresses the dimension of cognitive ability known as "the capacity to learn," or instruction in what cognitive and educational psychologists have called the "learning to learn" processes.⁴¹ One must be able to attend and to orient himself to a discrete stimulus or phenomenon; one must be able to exercise acutely the senses of sight, touch, or hearing, i.e. one must listen with all one's attention; and one must begin to organize one's thoughts, and proceed in an orderly, if not planful manner in one's observation. Learning begins with this "centered" addressing, by the individual, of an empirical moment. The Greeks were fascinated by and skilled at exploring the particular as a first step in seeing the design or necessity of events. H.D.F. Kitto writes of their ability to exercise their nous, the intuitive comprehension of the object as a manifestation of a more general schema of meaning, arrived at through the keen seeing of its denotative and connotative dimensions:

In the passage which I translated from the *Iliad* there is one detail that strikes me as being extremely Greek. 'His heart within his shaggy breast was torn, whether he should...slay Atreus' son, or put away his wrath.'

Tennyson, translating Virgil, writes of a similar moment:

This way and that dividing his swift mind.

The mind, to be sure, is not the heart, but we should be astonished if Tennyson, or Virgil, in mentioning either heart or mind, had at the same time mentioned a physical detail of the body in which this heart or mind resided. Homer finds it perfectly natural to notice that the chest is a hairy one. He sees that whole man at once.⁴²

This seeing of universal meaning in a particular act or artifact led to the sculpture of the Greeks, and the "in medias res" of Homer to the terse beauty of their drama. The first experiences of the student in his historia should begin similarly with empirical descriptions and thoughtful questions in relation to artifacts and events from differing periods of culture. The goal of these first weeks is to stimulate the interest of the student in things new and strange to him, to elicit genuine, "naive" questions about culture, while schooling his senses in accurate observation. The use of historical and contemporary visual and textual artifacts

will indirectly inculcate an interest in the fact of culture and the continuity of its creators. The emphasis is not on memorization of the names of the things or persons who created them, rather upon the observation and the questioning. One or more instructors who can question along with the students, offering thoughts and queries from the perspectives of differing fields and divisions of knowledge, will begin to provide a model for the diverse disciplinary interests and their formulation into coherent queries. However, the student's own often clumsy questions should be given the lion's share of attention and careful respect. As Immanuel Kant said of democracy: "We cannot ripen to this freedom if we are not first of all placed therein (we must be free in order to be able to make purposive use of our powers in freedom). The first attempts will indeed be crude and usually will be attended by a more painful and more dangerous state than that in which we are still under the orders and also the care of others; yet we can never ripen with respect to reason except through our own efforts (which we can make only when we are free)."⁴³ It is this freedom to express judgments that allows genuine interests to become at home in the academic setting. The teacher should reward interest, descriptive clarity, and congruent generalization. Historia occurs with the wealth of pregnant questions, not with the closure of premature answers, or the application of traditional concepts from the side of the teacher. (The most exciting class I experienced as a student was one in American Constitutional history in which the teacher opened the first class by asking each student for his definition of democracy, and insisting for three more periods that more could be said by us.) The questions and observations made by the student in this first phase of the freshman program should be of sufficient scope and depth of interest to provide ideas that will be pursued by the student over the two semesters of the interdisciplinary course, and most likely over his on-going study of culture.

The artifactual study is conducted with only a minimum relation to the historical-cultural context. The individual stories of the cultural creators, the paradigms in which they worked, and the environmental stresses which acted upon them are only broached as they become significant questions to student interest. Even then, individual assignments are often possible so that the student can help develop the information. The format should be anthropological in the sense that the artifact's facticity in its material, shape, function and inferred significance for human life in a specific environment should be the focus. If a student departs from this perspective in a question, ask him if there is some fact in what he sees that might lead to an answer. (Again, the models from my experience are ones that have the student dwell on observation, query, and comment for an extended time; one of the most interesting classes I have seen is a freshman drawing class in which the students had to select an acorn and draw it from different perspectives for 12 hours, over a period of a month. Goethe's botanical studies reflect this thoroughness, and from it came not only science, but the richest analogies to spiritual development.)

The second phase of the course is directed to the refinement of student questions. Exercises are given in the definition of the concepts used in key

questions. The Aristotelian idea of formal definition helps the student ask single, coherent questions, and enables him to see how a focused question can in itself suggest a path to answer. The second aspect of cognitive ability is treated in this manner, the ability to think abstractly. The student is shown how a genus contains the general idea of specific facts, and how several artifacts which are observed can share genera elicited from his own question. The instructor at this point begins to work with the individual student question with a view towards its rephrasing to include the perspective of various disciplines. The didactic introduction of disciplinary paradigms in their historical locus of problems, evidence, and methodologies can now be integrated into the discussion. Yet, in this introduction of disciplines the central figure of the questioner should not be lost. The student must not feel that now reality begins, a lecture course, and that his questions were simply a gesture. There must be a continual counterpoint between the reformulation of questions, and the increasing knowledge of how fields formulate their questions, in concepts, direction of evidential interest, and the boundaries which are manifested in what Jonathan Brodido has called the "radical egocentricity" of the disciplinary researcher.⁴⁴ Both examples of exemplary interdisciplinary researchers and single field-oriented researchers should be presented as they developed questions over time. The student should be given in the midst of these presentations an assignment that has them list several field-specific questions that are variations of their original question in a manner that suggests a potentially thorough interdisciplinary treatment of their interest. The time factor in thoroughly treating a question in actuality should be made clear in the examples of successful research, illustrating that it often spans generations, and that a contribution to knowledge is often cooperative, and when individual, limited. The student should be given a sense of the reality of the empirical adventure, tolerance for ambiguity, the use of inherited concepts and problems, but yet how thrilling a breakthrough can be, and of the immortality attained in the development of knowledge. Sigmund Freud is an example I use in presenting the pioneering aspects of research, and also its necessary augmentation of existing problems in several fields. I show his interest in the phenomenon of an "unconscious" in mental life from the time he listened to the lectures of the philosopher Franz Brentano, indicating the types of questions he developed concerning the unconscious within the influence of philosophy, then tracing the reformulations of his questions that dealt with the unconscious as he studied the problems that existed in other fields, such as physiology, psychiatry and anthropology.

The student is then asked in the third phase of the first semester to select several fields whose treatment of his question might be of particular interest. He is asked to look up a description of these fields in an encyclopedia and handbook of a division of knowledge that includes the fields. He is given a map of the college library, with the reference section circled, and asked to introduce himself to the reference librarian and ask for any orientation needed. On the basis of this initially limited library assignment a class discussion directed by the students explores the paradigms of particular fields. The instructor then shares several fields of special importance for his own question, which has been

refined for this course along with the student work, and announces the next phase of the course which will be to explore how the fields the student has selected treat the issue of interest. The third element of cognitive ability enters the course, adaptability to new situations, in the independent use of library resources as the student historia into his interest intensifies.

The instructor should introduce library research by taking the class to the library and modeling how he moves through various sources in pursuit of his disciplinary questions. Hopefully, he can transmit the genuine excitement of a search. A follow-up session with the library faculty offers the students informative lectures and demonstrations of how their information systems work. Audio-tapes can be made to be used beyond the class period by the student to guide him in the step-by-step exploration of particular sources. The instructor can also design informative "worksheets" which 1) guide the student in the location of background readings in the divisions of knowledge and particular fields; and 2) focus the kinds of information which the student should glean from texts and journals in addressing how the field treats their question.⁴⁵ The student should concentrate upon how a researcher asks the question in which he is interested, what kinds of evidence are suggested by that question within the particular field, and what the limits are to the information gathered in the particular research study. A thorough answer to the student's main or sub-questions must be seen by the completion of this library assignment to be a product of years and interdisciplinary efforts. Class discussions of the findings of the library research will help secure this point.

The class is then divided into groups that represent the three major divisions of knowledge—humanities, social sciences, and natural sciences. Each group is asked to write a joint position paper on the scope of their division in its characteristic approaches to knowledge, and where overlap in its problems and methodologies with other divisions exist. A panel discussion led by members of each group explicate the particulars of their division's competence, and the possible areas of inter-division cooperation. (The group dynamics of this discussion allows an "open chair" format so that other members of the group can enter the discussion.) Then, the instructor selects questions from the class members to be discussed by each of the three divisions with the goal of a reformulation of the question to suit several disciplines in each division.

The semester should be approaching Thanksgiving break, or approximately ten weeks of work by the end of this third phase. Thus, by the closing weeks of the first semester the student has begun his historia with a thorough development of a personally meaningful question, generated by intensive observation of historical artifacts, and refined through cognitive tasks requiring extensive definition and reformulation according to field specific criteria. He has by this time entered the threshold of knowledge sources that display how significant his question can be, and he has been helped to understand that he stands potentially among predecessors who have furthered his question over generations without exhausting its richness. He has been introduced to the

modesty, yet grandeur of a researcher, in the lesson that cultural contribution emanating from an earnest question lasts a lifetime.

The final five weeks of the first semester, the fourth phase, seeks to solidify his ownership of the naive question and the sophisticated disciplinary questions he has posed. He is asked to amplify these questions by finding their roots in his past cultural experience. He is asked to write a cultural autobiography.

Research indicates that unless an individual identifies with the culture of which his learning partakes, he will not have the emotional or spiritual will to learn.⁴⁶ For members of the majority culture by birth this means that the individual must be shown how in fact he can contribute to that culture. The didactic discussion of the great cultural contributors to the West can "turn (the student) into stone with dumbness," as Socrates complained to Agathon in the Symposium, because the learning is offered in the style of the Sophists, allowing no thoughtful dialogue that is connected to the real experience of the student.⁴⁷ Unless one can see how in his own history of experience, and potential competence, he might pursue inquiry and research that might lead to some contribution on his part, the models of the renowned can simply increase his sense of distance from being a part of history. For members of minority cultures, the necessity of an explicit connection between Western culture and their own lives is even more vital. The contemporary and historical exploitation of other cultures by the West, in its worst use of its knowledge and technology, appears confirmed in even the best thinkers at times. The inquiry approach can be an entry to cultural study that allows a minority student to see the strength of the academic paradigms, free of the dross of culturally biased applications, if he is helped to apply those methods within cultural problems linked to his inherited family and ethnic culture. Once he begins to feel what we will call the locus of control, the sense of personal agency, in his wielding of research methodologies, he will see that he can use these skills to integrate his cultural heritage into the mainstream culture.

Thus, in the final five weeks of the first semester the student is asked to write autobiographical accounts of his cultural experience that apply the questions he has pursued as helpmeets in analyzing and synthesizing that experience. He is encouraged through historical examples provided by the instructor to see how cultural contributors from past periods of history were often stimulated in their work by the pressures of their place in society and how their own guiding questions which remained fairly constant in all their research, were born of their cultural struggle. I have used Freud as a figure whose anger at his ethnic plight in Austrian culture undergirded, in part, his desire to find a cultural common denominator that would show the feet of clay of all persons. The motto of *Interpretation of Dreams*, taken from the *Aeneid*, an account of a defeated peoples' founding of a new land, is "If I cannot bend the gods above, then I will move the infernal regions."⁴⁸ The success Freud evidenced in turning his legitimate sword into a ploughshare, of transforming impotent anger into a sublimated search for the realms of consciousness that caused the discrimination

he suffered, exemplifies the ethical goal that may be accomplished with the outrage many of our own citizens feel in relation to the majority culture. The examples from our own cultural history allow the student freedom to make his own formulations of his place in contemporary history with some originality. Moreover, the creation of historical continuums based upon the social-psychological problems that confront researchers, link all students emotively to the ever recurring ground of his contemporary struggle. The students share their reflections with each other. When each person's contemporary life is expressed in the aporia of self-involved thought, a mutual respect for the reality of these problems is bred in the class. There also develops, albeit indirectly, a sense of common plight that transcends self-righteous limitations. In these closing weeks of the first semester a third learning variable begins to be integrated, task motivation, yet a task motivation educated by the growing sense of interdependence in a shared world.

Second Semester

Building and Testing Cultural Models

Immanuel Kant wrote that without goodwill towards others in one's efforts, the most effective competencies will have negative effects within the culture.⁴⁹ Educating the skills of inquiry towards productive research can become a zealous desire for the student who is shown how his own cultural plight can be improved through what he has learned. However, unless his zeal is tempered by the recognition of a common world of other strugglers, whose cultural problems are equally significant, he will come to lack an ethical measure in his accomplishments that distorts the human proportion of his efforts. The human proportion of knowledge and its applications centers upon one's realization that we are a common species, and that what one creates must benefit all humanity: The researcher must also be a citizen. This means that he must 1) learn to live more intelligently in the world as a consequence of attending to the creative processes of inquirers from many fields; 2) see his commonality with others in the human community by recognizing the universality of the creative, inquiry process; 3) be open to dialogue with inquirers in other fields so as to intelligently appreciate the diversity of the common pursuit of civilization, as well as to inform his own work; 4) exhibit an active care for the environments of the world that support the inquiry of others; 5) realize that there are consequences to his work that he may not fully comprehend as they are directed to a public world complex beyond his knowledge; and 6) develop a vocabulary that can communicate the significance of his work to those who are not familiar with its problematic or outcomes.

Research into task motivation, while extremely interesting, and demonstrating convincingly that each separate task demanded in an educational environment must be tied to the self-concept and long-range cultural goals of the individual, has neglected the interdependent and historical world shared by each

of us. The ground-breaking work of Kurt Lewin into task motivation and decision-making within a complex field of others analyzed individual movement towards a goal within the classic paradigm of an atemporal individualism which treated all other persons and things of the environment as positive or negative factors according to their potential for helping him achieve that goal.⁵⁰ The contemporary research of John Atkinson and Joel Raynor into task motivation follows a similar line of thought. Atkinson and Raynor discuss "contingent path theory" which shows that one is more highly motivated to complete a task that is meaningfully related to long-term goals.⁵¹ Incorporation of long-term cultural goals into the education of the individual is vital, as we have discussed in our consideration of cultural aspiration, but as we have also pointed out, it must be a cultural aspiration cognizant of the historical complexity that surrounds everyone in the culture. Jean-Paul Sartre has criticized the lack of historical dimension in Lewin's studies largely because of the atemporal individualism that legislates against a cooperative interdependence.⁵²

The second semester of the course is designed to reinforce particularly the notion of human proportion in research by heightening awareness of the researcher as a citizen. The semester begins with a three week presentation of the arts and sciences in a highly creative historical period, such as the Dutch Republic of the late 1500s and early 1600s, or Florence in the 1300s and 1400s. The presentation stresses the interaction between the social-economic, political, and religious values of the society, and the problems, themes and conventions of the artists, and the contributors to science. The individual solutions to problems in the arts and sciences are set against the background of public life, and the character of the lives of the individual contributors measured against the norms of that public life. In the month that follows this study, the second phase of the second semester, the students are directed towards library sources in contemporary culture which will help them identify artists and scientists who work within the locus of the problems touched upon by their first semester questions. With the model of the analysis of the historical period recently reviewed in mind, the class begins to construct a sense of our contemporary culture's social-economic, political, and religious values. The intensive study of how a creator in the arts or sciences has worked to further, augment, or change these normative values following questions which have been thoroughly integrated into the thinking of the student, enables the class to arrive at a fairly complex, open-ended picture of our culture. The dialogue between students, furthered by various group process techniques for stimulating the sharing of student work and thought in the construction of the societal model, lends to the student's education as potential citizen-researcher. The work of his chosen subject will be discussed by others in some of its potential environmental problems, and its necessary reliance on the work of other fields. The student will come to see how researchers in all fields share not only similar methodologies, but also some of the social pressures which guide their work. Insights into directions of potential research based upon cooperative efforts can emerge, as the students recognize the parallel paths of many fields. Economies that can be won through more thoughtful interdisciplinary work will become evident.

The horizon of the individual student in his historia has been widened through this thorough examination of how his particular interest, and those of his fellow students, are reinforced or constrained by the contemporary cultural norms. He has learned to empathize with the efforts of contemporary researchers who seek to realize their own lives as thoughtful workers within this cultural setting. He has also seen how another period in Western cultural history raised similar tensions in the pursuit of knowledge. He has begun to see how the pursuit of knowledge also entails attitudes and actions that promote responsible citizenship. In the final phase of the second semester he will select a research project that deepens these understandings, and affords him the opportunity to demonstrate to himself and others that he can begin the same journey as the exemplary individuals he has studied.

Otto Rank's stress on action that enables the person to experience his own sense of agency and potency suggests how important the element of creative, independent research is in the student's education. The conclusion of the course must focus upon the student's synthesis of what he has experienced, and the exercise of the skills he has learned, in an extended research effort that balances his own questions and interest with a grasp of the interdisciplinary import of research in the Liberal Arts. Three types of projects are offered as vehicles for this synthesis. The first has a small group who share a similar question, which has been translated into disciplinary formulations in the humanities, social sciences, and natural sciences. They are asked to design quasi-experimental and experimental conditions in which evidence may be gathered that could begin to answer their major concern. The design is based upon the implementation of several methodologies central to the social sciences: the survey, behavioral observation, and performance of artifactual testing. These methodologies are also used by researchers in the biological and medical sciences. If not self-evident, the value these methodologies may have for philosophers, historians, and others in the humanities will be demonstrated to the student whose major interest is in this domain, as he cooperates with his team members in the project. The team is guided in the development of several hypotheses with the aid of a workbook-text which then carries them step-by-step into the design and implementation of the research plan. Library research into the concepts of the hypotheses is included in the format, thus the humanist is given ample opportunity for a cultural-historical pre- and post-analysis of the research, which will emphasize his integral importance as a representative of the humanities. The seven week scope of the project allows the use of class time for general and specific discussions of the student work. As the purpose of this research is to allow the student to exercise his ingenuity in differing environments in pursuit of his interest, thereby beginning his journey as a researcher, the evidence he gathers and the methodologies he employs are of instructive value and not meant to have the sophisticated or scientifically rigorous quality that he will come to achieve in his later studies. The errors he makes can school his self-direction for the refinement to come in the future.

The second alternative is a test of the model of contemporary culture in its effects upon the researcher in the humanities, social sciences, and natural sciences. The individual or small group constructs a survey instrument for an extensive oral interview that will probe the attitudes and actions of the researcher which respond to the pressures of contemporary cultural norms, and explore the researcher as a citizen of the research community and the public world. The questions will incorporate the student's repeated consideration of the major characteristics of disciplinary paradigms, and the manner in which the researcher employs them. The student's own cultural aspirations will provide a chrysalis for the questions directed towards the researcher's citizenship. The students will be given preliminary training in conducting an oral interview, with the help of a faculty member skilled in this form of research. The interviews will be analyzed, and commonalities and differences between the researchers will be presented for class discussions.

The third alternative will be for an individual or small group to construct a model of the socioeconomic, political, and religious values of a historical generation in Western culture, similar to that developed by the instructor at the beginning of the semester, and the students of contemporary culture. Within that model several researchers in the arts and sciences of that time will be studied in their interaction with the norms and with each other. The concept of the researcher as citizen of a research community and public world in a past generation will be a challenging problem, but one the student can manage in the light of his previous work. One possible format for the juxtaposition of the past thinker with his environment and fellows is a reconstruction which has that individual articulate the questions and reflections that accompanied his cultural creation. His purview of the possible bodies of knowledge that influenced his perspective and attitudes, the limits he may have seen in certain attempts at knowledge, and the avenues which promised the most exciting exploration, can be brought forth in first person monologue. Or, the student may create a dialogue with the historical person, testing in his imaginative conversation the time-bound quality of that person's questions, experimenting with the historical boundaries of the past person's relation to social and psychological problems. There exists a paradigmatic construct in intellectual history, sociology, and literary criticism, emanating from the time of Wilhelm Dilthey, which emphasizes the understanding one can gain of the past, and of oneself, in such a counterpoint with historical lives in imaginative dialogue.⁵³ The student may arrive at a historia that soundly integrates his own perceptions of the issues of his life, and his own path in the environment, through his approximation of the challenges faced by the historical person, and the means whereby that person responded in the pursuit of knowledge.

The guidance the instructor provides in carefully outlining the scope and steps of the final project is critical for the two semester historia. There must be an adequate consideration of the person-centered relation to the research so that the student's two semester pursuit of a personal question is not overwhelmed by the objective information or procedural tasks. The use of worksheets for each

step of a project can insure the instructor and the student of the introspective element which balances the pursuit of knowledge with the reflection upon how the knowledge gained informs one's own cultural aspirations and view of life.

Similarly, the interdisciplinary focus of each of the projects must be supported through questions addressed by the instructor to the students as they develop each phase of their project. This is best done through a prior deliberation by the instructor of what will be involved in the research of each alternative. The reference back to issues studied over the two semesters will bolster the student's confidence in moving forward with original work. The Ariadne's thread of his past deliberations will help him meet in dialogue the living and historical researchers he encounters.

With these helpmeets that keep the person-centered and interdisciplinary pedagogy of the course in focus, the student will be free to test his powers, assured in the terrain he will cover. "We can deliberate about things that are in our power and can be done." The concept of locus of control, the modern version of Aristotle's dictum, has been shown to be critical for any academic success. One must feel and demonstrate ownership in any practice. There must be a habitual character to the performances. This habituation begins from a continuity of one's actual life in the environment. That is why the person-centered approach which grounds new learning in the student's past concerns is so vital. He must see the new rigor of academia as a refinement of his past goals and thoughts. This new culture must become an extension of his past culture. Even the cognitive skills he practices must be integrated into issues which touch his deepest thoughts, for then they are not mere exercises, but a strengthening of his mind to meet challenges that are significant to him. Whether he specializes in the future of a single field, or becomes an interdisciplinarian in his mix of learnings, he must conceive this academic endeavor as a study of human problems within an environment he has either experienced directly, or one that shares common human elements with his life environment. The consequences of his research must be seen as consequences that affect his life, and the lives for those who have their own concerns who share his world. His locus of control is basically within his awareness of how to effect his aims in the world. An education that allows him to incorporate his aims in the learning will enlist his entire commitment. The accurate empathy of others in his present, and in history, will grow from a human response rooted in his sense of personal competence to explore these issues, as he would in ordinary life if one could show him how he could grow through such an informed openness. His self-esteem, cultivated in his competence as a researcher, will have a correlation to the attributes of a humanist-scientist, an accomplishment of his empirical adventure. Socrates and the peripatetic school of learning cease to be historical artifacts as one considers how through intelligent questioning one can lay the foundation for an approach to the arts and sciences which moves the questioner as a whole person towards his future.

NOTES

¹See Jonathan Broido, "Interdisciplinarity, Reflections on Methodology," in *Interdisciplinarity and Higher Education*, edited by Joseph J. Kockelmans (University Park: The Pennsylvania State University Press, 1979), p. 279; See also an excellent summary of Broido's theory of interdisciplinarity in the recent article by Julie Thompson Klein, "The Dialectic and Rhetoric of Disciplinarity and Interdisciplinarity," *Issues In Integrative Studies 2* (1983) pp. 37-38.

²See Thomas C. Benson, "Five Arguments Against Interdisciplinary Studies," *Issues In Integrative Studies 1* (1982), pp. 38-48.

³For a discussion of "generic" inquiry skills that are shared by the social sciences and humanities, see the following publications by Mark E. Blum and Stephen D. Spangehl, who offered the courses that are integral to the two semester course presented in this paper: 1) "College Program Built Around Cross-Disciplinary Competencies," *Competency Forum*, III (1978): 11-16; 2) *Ideas and Research: A Course Introducing Inquiry in the Social Sciences and Humanities*. ERIC (1978), ED 157 812; 3) *Identifying Skills and Developing Curricula in Academic Research: Rationale for a Competency-Oriented Curricula*. ERIC (1980), ED 183 118; "A Developmental General Education Course: Introducing Inquiry in the Social Sciences," *Journal of Developmental and Remedial Education 4*: 24-26; and 5) *Developmental Education and the University College: A Competency-Based Approach to Education*. ERIC (1978). ED 157-813.

⁴See a history of the concept of individuation, with recommended source readings, in *The Oxford English Dictionary*, Volume V. (London: Oxford at the Clarendon Press, 1983), p. 225.

⁵St. Thomas Aquinas, *Summa Theologiae*, Vol. I. (Lohdon: Blackfriars, 1963), pp. 89-90.

⁶Aristotle, *Topics*, Book I, Chapter 2.

⁷Immanuel Kant's *Critique of Pure Reason*, translated by Norman Kemp Smith, (New York: Macmillan, 1968), pp. 645-655.

⁸Immanuel Kant, *Critique of Pure Reason*, p. 656.

⁹Immanuel Kant, *Critique of Pure Reason*, p. 656.

¹⁰Werner Heisenberg, *Physics and Beyond, Encounters and Conversations*, translated from the German by Arnold J. Pomerans. (New York: Harper Torchbooks, 1972).

¹¹Werner Heisenberg, *Physics and Beyond*, p. vii.

¹²For a capsule review of the influence of diverse fields of the humanities on Sigmund Freud, see Ernest Jones, *The Life Work of Sigmund Freud*, edited and abridged in one volume by Lionel Trilling and Steven Marcus. (New York: Doubleday Anchor, 1963), Chapters 3 and 4. An excellent review in more depth, although a work of fiction (thoroughly researched for factual detail) is Irving Stone, *The Passions of the Mind, A Biographical Novel of Sigmund Freud*. (New York: New American Library, 1971).

¹³See especially Sigmund Freud, *The Origins of Psychoanalysis, Letters to Wilhelm Fliess*, translated by Eric Mosbacher and James Strachey. (New York: Basic Books, 1954); for the formative influence of Freud's explicit interdisciplinary interests by his conversation circle, see Sigmund Freud, *On the History of the Psycho-Analytic Movement*, translated by Joan Riviere, revised and edited by James Strachey. (New York: Norton, 1966), pp. 36-37.

¹⁴See Sigmund Freud, *An Autobiographical Study*, translated by James Strachey. (New York: Norton, 1952), pp. 41-42; and, Josef Breuer and Sigmund Freud, *Studies on Hysteria*, translated and edited by James Strachey. (New York: Basic Books, N.D.), pp. xxi-xxiv.

¹⁵See Ernest Jones, *The Life and Work of Sigmund Freud*, pp. 143-144 for a discussion of Joseph Beruer's counter-transference to "Anna O." his fear of the patient, and the form of therapy in the wake of that counter-transference of which he was unaware.

¹⁶Immanuel Kant, *Critique of Pure Reason*, p. 323.

¹⁷See Werner Jaeger, *Paideia, The Ideals of Greek Culture*, Volume I, translated from the German by Gilbert Highet (New York: Oxford University Press, 1974), pp. 155, 179, 294, and 382. Jaeger does not allow the person-centered aspect of the inquiry. However, see Hermann Frankel, "Xenophanes' Empiricism and His Critique of Knowledge (B34)," in *The Pre-Socratics, A Collection of Critical Essays*, edited by Alexander P. D. Mourelatos (Garden City, New York: Anchor Press, 1974), p. 125 where the notion that led to the concept is formulated by Xenophanes. Knowing from one's own experience, seeing for oneself; and the unity of vision that led to the understanding of the individual in a world of uniform law was credited to Xenophanes by Aristotle, *Metaphysics A*, 5, 986 b 21. Herodotus further developed the concept through his *historia* (history) which traced the causes of the political events which conditioned individual life, but which emanated in individual judgment; see Frankel, *Ibid.*, p. 125.

¹⁸John Burnet, *Early Greek Philosophy*, Fourth Edition (London: Adam & Charles Black, 1945), pp. 140, 141.

¹⁹The movement of the concept from physical research to the study of human events, or "history," relied on a synthesis of facts and critique of tradition that created a unified interpretation of the interrelations of events and their guiding cause: see Jaeger, *Paideia*, p. 382. He says of the Greek historian Hecataeus, who preceded Herodotus: "As far as we know, Hecataeus (who came like the first great physicists from Miletus ...) was the first to transfer his 'investigation' from the whole of nature to one special field, the inhabited earth. ... His account of the countries and peoples of the world, a remarkable blend of empirical knowledge and logical hypothesis, if taken together with his

genealogical studies and his rationalist criticism of mythology ... was also a precondition for the rise of history."

²⁰Aristotle, *Physics*, Book B, 1-3.

²¹See for example on Dante's modern significance, "Editor's Instruction," *The Portable Dante*, edited by Paolo Milano. (New York: Viking Press, 1974), pp. xxxix-xi.

²²See Leon Battista Alberti, *On Painting*, translated by John R. Spencer. (New Haven: Yale University Press, 1966).

²³One may see the deepest extension of the mathematical disappearing point which carries the eye into a secular, infinite world, within the orthodox theory of Alberti, in Raphael's *School of Athens*; see "Introduction," *On Painting*, p. 31. Representational painting since the Albertian perspective of the Italian Renaissance has varied the depth of field, but adheres essentially to his understanding of the unified theme which orders empirical reality, and the notion of a singular meaning of the momentary vision of events.

²⁴Aristotle, *Nicomachean Ethics*, Book 111, 3,1112a, 30.

²⁵Immanuel Kant, "What is Enlightenment?" in *On History*, edited by Lewis White Beck. (New York: Bobbs-Merrill, The Library of Liberal Arts, 1963), p. 3.

²⁶See Mark E. Blum and Stephen D. Spanghel, *Developing Educational Programs for the High Risk Secondary School and College Student*. (New York: University, ERIC/CUE Urban Diversity Series 80, 1982).

²⁷Mark E. Blum and Stephen D. Spanghel, *Developing Educational Programs*, pp. 5-8.

²⁸Raymond B. Cattell, *Abilities: Their Structure, Growth, and Action*. (Boston: Houghton Mifflin, 1971), p. 10.

²⁹Mark E. Blum and Stephen D. Spanghel, *Developing Educational Programs*, p. 9-11.

³⁰John W. Atkinson and Joel O. Raynor, *Personality, Motivation, and Achievement*. (New York: John Wiley & Sons, 1978).

³¹Otto Rank, "Fate and Self-Determination," in *The Self, Explorations in Personal Growth*, edited by Clark E. Moustakas. (New York: Harper & Row, 1956), p. 73.

³²See Mark E. Blum and Stephen D. Spanghel, *Introduction to the Social Sciences: Teacher's Manual and Text*. ERIC (1981). ED 200 474, pp. 11-21, for an example of an evaluation system that works with acts of "self-determination."

³³See Mark E. Blum and Stephen D. Spanghel, "Individualizing Instruction With Worksheets," *One to One. Journal of International Congress for Individualized Instruction*, 1 (November, 1978): 11-13.

³⁴Mark E. Blum and Stephen D. Spanghel, *Developing Educational Programs*, pp. 12-14. For the best primary sources on this concept see Samuel S. Peng, Cecille E. Stafford, and Robin J. Talbert, *National Longitudinal Study: Review and Annotation of Study Reports* (Research Triangle Park: Center for Educational Research and Evaluation, Research Triangle Institute, 1977); the concept was brought to public attention by the Coleman report in 1966; see James S. Coleman et al., *Equality of Educational Opportunity* (Washington, D.C.: Resources in Education, 1966) (ED 012275). When self-esteem is high, but not congruent with the competencies that support the factual basis of a perception of competency, there is no academic success; see J. G. Bachman, P. M. O'Malley, and J. Johnson, *Adolescence to Adulthood: Change and Stability in the Lives of Young Men* (Ann Arbor: University of Michigan, Institute for Social Research, 1978). Congruence between self-esteem, a sense of high locus of control, and competent achievement in academia is best reached by programs that combine study and work, creating a more serious attitude in the student; see Anthony J. Conger, Samuel S. Dunteman, and George H. Dunteman, *National Longitudinal Study of the High School Class of 1972: Group Profiles on Self-Esteem* (Washington, D.C.: Office of Education, 1977). The conduct of research may be seen as an integration of study and related work.

³⁵Mark E. Blum and Stephen D. Spanghel, *Developing Educational Programs*, p.13.

³⁶The extended research project in the second semester, and the shorter project at the end of the first semester may qualify this course for laboratory credit. The cooperation with developmental laboratory courses in critical thinking, or other skills that require additional development in the student would also qualify the course for possible, supplementary credit.

³⁷See American Association of State Colleges and Universities, *Connections*, Vol. 2, No. 1 (May, 1980), and Vol. 2, No. 2 (November, 1980).

³⁸See American Association of State Colleges and Universities, *Connections*, May, 1980, pp. 5-6.

³⁹American Association of State Colleges and Universities, *Connections*, May, 1980, p. 6.

⁴⁰Mark E. Blum and Stephen D. Spanghel, *Introduction to the Social Sciences: Teacher's Manual and Text*. ERIC (1981). ED 200 474; the text is programmed through 19 units that span one semester, designed to allow self-managed research. The library text is printed locally through the University of Louisville; it, too, is designed as a programmed, self-managed research text.

⁴¹See John W. Thomas, *Varieties of Cognitive Skills: Taxonomies and Models of Intellect* (Philadelphia: Research for Better Schools, 1972), pp. 13-17.

⁴²H. D. F. Kitto, *The Greeks* (Baltimore: Penguin Books, 1951), p. 172.

⁴³Immanuel Kant, *Religion within the Limits of Reason Alone*, translated by Theodore M. Greene and Hoyt H. Hudson (Chicago: Open Court Publishing Co., 1934), p. 176.

⁴⁴Jonathan Broido, "Interdisciplinarity, Reflections on Methodology," pp. 278-279.

⁴⁵See Mark E. Blum and Stephen D. Spahgehl, "Individualizing Instruction With Worksheets," pp. 11-13.

⁴⁶Mark E. Blum and Stephen D. Spahgehl, *Developing Educational Programs*, pp. 9-11.

⁴⁷Plato, "Symposium," *Great Dialogues of Plato*, translated by W. H. D. Rouse. (New York: New American Library, 1956), p. 94.

⁴⁸See Ernest Jones, *The Life and Work of Sigmund Freud*, p. 229, n. 4.

⁴⁹Immanuel Kant, *Fundamental Principles of the Metaphysics of Morals*, translated by Thomas K. Abbott. (Indianapolis: Bobbs-Merrill, 1949), pp. 14-15.

⁵⁰See Kurt Lewis, *Principles of Topological Psychology*, translated by Fritz Heider. (New York: McGraw-Hill, 1936).

⁵¹See John W. Atkinson and Joel O. Raynor, *Personality, Motivation, and Achievement*.

⁵²See Jean-Paul Sartre, *Search for a Method*, translated from the French by Hazel E. Barnes. (New York: Alfred A. Knopf, 1967), pp. 68-70.

⁵³See Mark E. Blum, "Dialogue With Autobiography: Integrating Through the Study of Personality," *Issues in Integrative Studies* 2 (1983), pp. 76-78.

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