PRAGMATISM AS PHILOSOPHY OF SCIENCE:
A TOOL FOR PUBLIC ADMINISTRATION

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ABSTRACT

This chapter demonstrates how pragmatism as a philosophy of science is used in a Public Administration Research Methods Class. This class is designed to get students ready to write an empirical capstone project. Three elements of the course are developed—finding a topic, developing a research question, and choosing a conceptual framework. The notebook method, a tool to find a topic and develop the research question, is presented. Conceptual frameworks are classified into five types and linked with the research purpose, question, modes of research, and statistics. Both the notebook method and the classification of conceptual frameworks are discussed in light of their pragmatic roots. Specifically, they are linked to the ideas of Charles Sanders Peirce and John Dewey.

This chapter has multiple agendas and rhythms. First and foremost, it demonstrates the relevancy of Pragmatism as a philosophy of science to Public Administration theory and practice. As the reader will learn, pragmatism makes little sense outside the context of a "problematic situation." Hence, on a second level, this chapter examines the "problem" a Masters of Public Administration Program had with its written, empirical, capstone project. A new formal research methods course was designed to address the practical and theoretical problems students had with empirical research. The pragmatic philosophy of science has been instrumental in the evolution of this unorthodox approach to research methods. The course has also been successful. For example, over the last five years, over 95 percent of the students' papers have had clear conceptual frameworks which explicitly link to empirical data (Almaguel 1997).

According to Abraham Kaplan (1964, p. 24), the "most important contribution that methodology can make to science is to help unblock the roads to inquiry." Through the description of two key elements of the research methods course, this chapter addresses the techniques, tools, and rationales for unblocking PA inquiry. My sense is that because pragmatism speaks to the world of practice, it has the potential to unblock many more roads to PA inquiry.

PRAGMATISM AS PHILOSOPHY OF SCIENCE

When I began studying pragmatism, I was attracted to it because it incorporated elements of the PA experience missing from the larger PA literature (Shields 1996b). First, it resonates with practitioners; capturing their voice and experience. Secondly, it is a living philosophy with a deep intellectual heritage also known as Classical American Philosophy (Seigfried 1996).

At first, there appeared to be no link between my teaching and scholarship. I teach a two course research methods sequence. The first course focuses on getting the students ready to write their capstone research project known as the Applied Research Project (ARP).[1] In the second course, the students are not taught as a class per se; rather, as their teacher, I supervise them individually.[2] Gradually, I recognized the applicability of my formal scholarship to the research methods sequence. When I consciously began using the ideas of pragmatism, the quality of the papers improved as well as the ease of their supervision.

The connection between my scholarship and teaching was solidified when I found that Abraham Kaplan, (1964, p. xv) in the preface of *The Conduct of Inquiry*, acknowledges his debt to the pragmatists. "In particular, those who are acquainted with pragmatism will be aware of how much greater my indebtedness is to Peirce, James, and Dewey than is made explicit by citations." Kaplan also maintains that the traditional "hypothetico-deductive" method of inquiry associated with behavioral science methodology is problematic, because "most of the important incidents in the drama of science are enacted behind the scenes"

(Kaplan 1964, p. 10). The logic-in-use of pragmatism emphasizes the "behind the scenes" elements of inquiry, such as, procedures for forming concepts and hypotheses (Kaplan 1964, p. 23).

The "behind the scenes" elements of inquiry can and should be emphasized. Hence, this chapter and my course address some elements of the research process which are often undiscussed. The works by the early pragmatists (Peirce, James, Dewey) along with Kaplan's fresh interpretation have anchored the approach to inquiry that characterize the two course sequence. Kaplan's (1964, p. 85) description of the basic scientific question: "What the devil is going on around here?"[3] defines my approach to scientific inquiry in PA.

What is Pragmatism?

Pragmatism is the philosophy of common sense. It uses purposeful human inquiry as a focal point. Inquiry is viewed as a continuing process which acknowledges the qualitative nature of human experience as problematic situations emerge and are recognized. Recognition involves the doubt associated with questioning existing belief systems. Doubt is resolved through critical reasoning and ultimately tested in action. It is the philosophy of common sense, because actions are assessed in light of practical consequences. Finally, inquiry is not necessarily limited to individual effort, rather it often incorporates a "community of inquirers." The applicability of pragmatism to Public Administration inquiry flows from the above definition.

Although four individuals[4] (Charles Sanders Peirce, William James, John Dewey and Jane Addams) are often noted as the founders of pragmatism, for purposes of this study, the closely related ideas of Peirce and Dewey are most relevant.[5] Both explicitly dealt with inquiry. The ground work was laid by Peirce and was later used and expanded by Dewey in *Logic: The Theory of Inquiry* (1938).

John Dewey (1938, p. 104) defines inquiry as "the controlled or directed transformation of an indeterminate situation into one that is so determinate in its constituent distinctions and relations as to convert the elements of the original situation into a unified whole." He goes on to say that the transformation "is achieved by means of operations of two kinds....One kind of operations deals with ideational or conceptual subject-matter....The other....is made up of activities involving the techniques and organs of observations" (Dewey 1938, p. 117). This chapter deals with ways to enable the "transformations" of inquiry using both conceptual subject matter and activities/techniques.

Pragmatism's Scientific Roots and Link to PA

Charles Sanders Peirce introduced the concepts of pragmatism[6] in the early 1870s. Peirce, the scientist, originally conceived pragmatism as a philosophy of science with a logic of inquiry at its center. From a public administration perspec-

tive, what is most interesting about Peirce, is his thirty year employment with the U.S. government as a physicist, astronomer, inventor, and occasionally, an administrator. Pragmatism for Peirce began during his tenure as an employee of the United States Coast and Geodetic Survey (currently the National Geodetic Survey). The nature of this agency and its scientific mission provide insights into both Peirce's pragmatism and links between pragmatism and public administration (Dracup 1995a, 1995b).

Ironically, at the time of our founding fathers, there were many links between politics, philosophy, and science. Thomas Jefferson, for example, was a scientist/ inventor, philosopher/politician. During his tenure as the President of the United States and President of the Philadelphia Philosophical Society (1807), Jefferson established America's first scientific agency, The Survey of the Coast. Through The Survey of the Coast, the leading scientists of the time were called together to solve practical problems in order to facilitate commerce. The current science of Geodesy grew out of this effort. Peirce joined the agency around the time of the Civil War.[7] He is credited with significant original contributions to the emerging science of Geodesy. Thus, he developed pragmatism while working at the *edge* of scientific inquiry as an employee of the United States government.

In many ways the science of geodesy is a good metaphor for pragmatism. Geodesy, which is the science of measuring and mapping the earth's surface, is continually involved with solving practical problems. It verifies its work empirically. It concentrates on empirical measurements that have practical applications. The scientists of geodesy develop tools to enhance their ability to measure. Geodetic findings are exposed to continual empirical verification and are assessed (at least in part) by their usefulness.[8] In this world, incorrect measurements could potentially play out as shipwrecks or lost commerce. In addition, geodesy is highly interdisciplinary; borrowing what is useful, including theories, from other sciences (astronomy, physics, geometry, engineering). Few sciences could be more instrumental or practical than geodesy.[9]

Theory-Practice-Product

There is one final aside before the mechanics of the course are discussed. In *Logic: The Theory of Inquiry*, Dewey (1938) contrasts his view of science and inquiry with the ancient Greek tradition. This discussion is important because it lays bare the origin of the theory-practice dichotomy.[10]

The Greeks used *theoras, praxis* and *poiesis* to classify ways of knowing. Theoras (or theory) is derived from the Greek word Theos or god. Theory dealt with the divine and the "fixed essence" of nature. For Plato, "aesthetic contemplation precluded or rendered inferior any serious interest in instrumentation" (Hickman 1990, p. 83). Praxis (or practice) indicated the "concrete performance of some activity based on the deliberate choice of a free citizen" (Hickman 1990, p. 107). Poiesis (or product) is associated with productive activities.

In Greek culture "ways of knowing were identified with ways of life" (Hickman 1990, p. 109), and Greek social organization reflected this ranking. The philosopher engaged in contemplation, the artisan (sculptor, ship designer) engaged in making, the craftsman (carpenter, shipbuilder) handled the society's production of goods and services. This philosophic formulation, reinforced by a social structure, created a "division between practice and theory, experience and reason" (Dewey 1938, p. 73).

According to Dewey, the problem with the Greek way of knowing was that it demeaned and discouraged experimentation. Both the craftsman and the artisan were actively discouraged from trying new ways of making or doing. This in turn inhibited the advance of science. Classical Greek thought discouraged "contact and interaction with the things of ordinary experience and the instruments of use in practical arts" because it was "supposed to contaminate the purity of science" (Dewey 1938, p. 74).

Dewey argued that in the actual productive activities of *modern science*, the classical Greek hierarchy was inverted. For modern science, "theory became a tool of practice and practice a means to the production of new effects. Theory no longer had to deal with final certainty but instead as working hypotheses with the tentative and the unsolved." (Hickman 1990, p. 99). In other words, according to Dewey, scientific progress occurred in the interaction between practice and production. Theory became a tool that mediated scientific progress.[11]

It should be noted that both Jane Addams and John Dewey place democracy at the heart of their philosophy. Addams's work and philosophy grew out of her "passionate devotion to the ideals of democracy" (Addams 1930, p. 79). For Dewey, democracy "is nothing less than a community of inquirers, a continual process of criticism, cultivation and growth" (Rochberg-Halton 1986, p. 19).

From the above discussion of pragmatism, a statement about the scope of Public Administration emerges. *Public Administration deals with the stewardship and implementation of the products of a living democracy.* The key elements are *products* and *democracy.* The term product is used as developed by Dewey. It is those items that are con-structed or pro-duced such as bridges, space ships, laws, health care, and education. As implementors, public managers engage the products. They are involved in making and doing—the instrumentality's of democracy. Public administrators operate within a living democracy. This is an environment that is changing, organic and teaming with values. Public administrators are stewards in that they are concerned with accountability, and effective use of scarce resources and ultimately making the connection between the doing, the making and democratic values.[12] Pragmatic inquiry is well suited to facilitate this vision of public administration.

The next section describes the problem Southwest Texas' Masters of Public Administration (MPA) program faculty, faced with their students' final capstone project. Each capstone project is an example of Public Administration inquiry. Often, these projects were examples of unsatisfactory inquiry.

Defining the Problem

Every Southwest Texas MPA student is required to complete an Applied Research Project (ARP). In 1988, a NASPAA site visit team identified several problems with the ARPs.[13] The quality of the ARPs was mixed. The literature reviews were unfocused and seldom analytical. Conceptual frameworks of any kind were missing. Data analysis sections were poorly written and disorganized. Perhaps most importantly, the ARP was identified as an obstacle to graduation because, on average, students took two to three semesters to complete the three credit requirement.[14]

Two key reasons for the problems with the ARPs were identified. First, development of the student's research question was hampered by poor mastery of background literature. Secondly, the students needed a clearer understanding of conceptualization and operationalization.

A two course sequence was initiated to address the problems. The first course would get the student ready to write their ARP. As an assignment, the students would be required to write a first draft of their ARP Literature Review chapter and develop a research prospectus. The course would discuss conceptual frameworks and operationalization. Since quantitative methods and survey research were covered in earlier courses, the new course would discuss qualitative methods such as field research and focus groups.

I was assigned responsibility for the new course (POSI 5304b). Little did I expect that the "problems" identified within the ARPs would be the very topics developed by the Pragmatists—a group of men and women that I would come to know in my role as scholar. Slowly, I began to realize that Pragmatism was a legitimate philosophy of science. As I consciously began to apply the ideas of Dewey, James and Peirce to assignments and class discussion the ARPs improved. And, the students began to struggle with higher order issues. In the next section, two elements of POSI 5304b are described. Both draw from the principles of pragmatism. One element, the Notebook Method, is a concrete instrument of inquiry. The other element, classifies conceptual frameworks and is an abstract tool.

Finding the Topic: The Notebook Method

A key assignment of POSI 5304b is a rough draft of the literature review chapter. In the process of doing the draft, students are expected to narrow their topic and find a research question. In order to ensure that the draft literature review was productive, I assigned, with the encouragement of colleagues,[15] what is now known as "The Notebook Method." This is a technique I developed and used for years in my own scholarship. I required the method because "it worked" for me (and colleagues with whom I shared it). Also, over the course of the semester, as the students absorb the related literature, the Notebook provides a concrete point of departure for discussion. Finally, I believe that the students should get

experiential exposure to writing using an outline. (See Appendix A for a complete description of The Notebook Method).

On the surface the notebook serves five practical objectives. First, the nature of the assignment increases the likelihood that the students will start the review of the literature early in the semester. Second, the notebook facilitates the organization of relevant materials. Everything the student-scholars need to write the paper is organized and located in one place. Third, the detailed, project-oriented, things-to-do list is a time management tool. Fourth, the integrated outline requirement increases the likelihood that the papers will be analytic. Finally, the method reduces the probability of plagiarism since the students are required to hand in their notes.

Interest and experience are usually the source of the research topic. Since most ARP students have full time jobs in the public sector, their research question often emerges from a work-related issue. The students use the notebook method as they gather literature related to the topic. The Notebook Method is introduced with a lecture about the importance of *Read-Write-Think-Connect to Experience* in inquiry. As the notebook builds, students are encouraged to read widely, take extensive notes and apply the readings to their work/policy experience. The first 15-20 minutes of each class is devoted to discussion on the progress and purposes of their notebook.[16] The first four to six weeks of the semester are filled with high emotion. Panic, confusion, resignation and anger are common. As the students construct their notebook (and master content) they learn that confusion and doubt are an essential element of the early stages of inquiry. The enormous ARP looms in the future. The problem of finding a topic and a research question often seem daunting. As the semester progresses a change begins to occur. A focus emerges, the disparate literature falls into place.

After reviewing over 100 notebooks and ARPs, I have noticed a relationship between the quality of the notebook and the quality of the ARP.[17] Students with sloppy, carelessly constructed notebooks are more likely to produce unacceptable or marginal papers. Conversely, the most thorough and well organized notebooks support the best ARPs.

I have been amazed at the variety of ways students have applied the principles of the notebook method to their jobs and personal life. The most common use is project management. I have also seen it used to organize testimony before legislators, solve crimes, write reports, organize employee recruiting, buy homes and plan weddings. Two job related benefits of using the notebook method at work are (1) greater organization and (2) the ability to answer the questions of superiors quickly and correctly.

As the semester unfolds, the students are charged with finding a conceptual framework. In my experience, the abstract nature of conceptual frameworks is another roadblock to inquiry. The notebook facilitates the search because it helps students to cope with the abstract. They learn that their task is to find theories and, or invent theories.

Clarifying Conceptual Frameworks

It is difficult to answer the question, "what is a conceptual framework?" Even after elaborate explanations, conceptual frameworks generally remain, using Kaplan's words, in the "twilight region" of inquiry (Kaplan 1964, p. 268). The veil of mystery surrounding conceptual frameworks in empirical research can be partially lifted by classifying conceptual frameworks using research purpose and clustering them with particular research questions, methods/techniques and statistics.

Within a lecture on the steps in the research process, different types of research purposes and conceptual frameworks are introduced.[18] Later in the same lecture, purposes and frameworks are integrated. This method of presentation begins to make conceptual frameworks concrete by giving them specific names and purposes. Perhaps most importantly, conceptual frameworks are contextuated within larger, more understandable research processes.[19] The specifics of the linkages are shown in Figure 1.

Five types of research purposes and conceptual frameworks are identified. The research purposes include exploration, description, understanding, explanation, and prediction. The conceptual frameworks are identified as working hypotheses, categories, practical ideal type, formal hypotheses and models.

The exploratory research purpose is paired with working hypotheses. Working hypotheses enable and focus evidence collection. They are particularly useful in qualitative research. Descriptive research is paired with categories. The research purpose "understanding" is linked with a practical ideal. This framework was drawn from Max Weber and is applicable to formative evaluation. Explanatory research is paired with formal, causal hypotheses. Most quantitative social science research is explanatory. Impact evaluation is an example. Finally, the predictive research purpose is paired with models. In many ways, predictive research is the mirror image of explanation. For purposes of this course, however, models are viewed as more complex than formal hypotheses. In addition, techniques such as cost benefit analysis are considered models.

Sense of Community

One of the overriding goals of the POSI 5304b is to create a sense of community within the class. Discussion (30% of grade), the sharing of telephone numbers, and the looming ARP create a sense of connection. I try and broaden the community to include graduates of the program and students who are currently writing their ARP. In their first class assignment, the students are expected to find three ARPs in the library and answer a series of questions about organization and content. Touching and reading the bound ARP give the student a concrete goal. Their job is to produce a document which will join the others on the library shelves. The sense of community is further strengthened through in-class panels of former and current ARP students. Members of the panel discuss their experiences. When the

1. **Exploratory Research**
   - **Types of Questions:** Anything goes What, When, Where, Why, Who, How or any combination of the above.
   - **Types of Conceptual Frameworks:** Most of the time working hypotheses and/or loosely defined descriptive categories.
   - **Types of Methods/Techniques:** Field research/case studies, focus groups, structured interviews, document analysis (usually qualitative).
   - **Statistics Used:** Usually none—but anything goes.

2. **Descriptive Research**
   - **Types of Questions:** What (you are describing something—what are its characteristics—What are the attitudes of administrators about policy...)
   - **Types of Conceptual Frameworks:** Descriptive categories
   - **Types of Methods/Techniques:** Survey, content analysis
   - **Statistics Used:** Simple descriptive statistics mean, median, mode, percentages, t-statistic.

3. **Understanding Research**
   - **Types of Questions:** How close is situation x to the ideal/standard? How can x be improved?
   - **Types of Conceptual Frameworks:** Practical ideal type (usually organized by categories)
   - **Types of Methods/Techniques:** case study, survey, document analysis, structured interviews
   - **Statistics Used:** if any .. descriptive statistics mean, median, mode, percent distributions, simple t-statistic

4. **Explanatory Research**
   - **Types of Research Questions:** Why (loosely what is (are)the cause(s)) the basic format is "if A then B" or is there a relationship between A and B. It is also possible to have several causal factors
   - **Types of Conceptual Frameworks:** Formal Hypotheses (generally between at least two concepts) Hint: when the hypothesis is put in operational form one can speak of the relationship between the independent and dependent variable.
   - **Types of Methods/Techniques:** Experimental/Quasi-experimental design, archival records, aggregated (time series) data analysis, survey
   - **Statistics Used:** t-statistics (comparison of means), correlation, Chi-square, analysis of variance, simple regression, multiple regression

5. **Predictive Research**
   - **Types of Research Questions:** What can one expect in the future? If the answer to the "why" question is known then the answer to questions about the future are clear.
   - **Types of Conceptual Frameworks:** Models including cost benefit analysis, cost effectiveness analysis, economic base studies, shift and shares analysis and formal hypotheses.
   - **Types of Methods/Techniques:** Experimental/Quasi-experimental design, Cost Benefit Analysis, Cost Effectiveness analysis, survey
   - **Statistics Used:** Analysis of Variance, simple regression, multiple regression Usually the most sophisticated of techniques.

Figure 1. Clustering Theory and Methods

5304b students hear the stories of their compatriots they connect to former students. Finally, I try to impress on the students that the authors' of the articles in the literature are real people. As their ARP unfolds, the students themselves become members of the larger community of inquirers, investigating their research topic.

PRAGMATIC PRINCIPLES FOUND IN THE COURSE

The remainder of the paper examines elements of the pragmatic philosophy of science found in the formal research methods course. It should be noted from the outset that using the ideas of Dewey and Peirce one must consider the ARP as an example of controlled inquiry. As such, it involves activities of "doing and making." Dewey (1938, p. 160) maintains that "all controlled inquiry ... necessarily contains a *practical* factor; an activity of *doing and making* which reshapes antecedent existential material which sets the problem of inquiry." In other words, from the pragmatic perspective, the conduct of scientific inquiry, "...is a mode of practice; the working scientist is a practitioner above all else, and is constantly engaged in making practical judgments" (Dewey 1938, p. 161) (italic added). According to Flowers and Murphy (1977, p. 855), Dewey saw learning as "the development of procedures and planning that can redesign sources of experience" (ways of making and doing). For him, learning wasn't trial and error; rather a redesign of trials and an insight into new modes of testing.

Dewey actually includes the administrator or manager in his discussion of the practical elements of inquiry. For Dewey, the

> administrator or manager, has constantly to inquiry what it is better to do next. Unless the decision reached is arrived at blindly and arbitrarily it is obtained by gathering and surveying evidence appraised as to its weight and relevancy; and by framing and testing plans of action in their capacity as hypotheses (Dewey 1938, p. 161).

Both scientist and administrator engage in inquiry. What separates them is the tools and the subject matter. The basic processes of inquiry are identical.

Dewey (1938, p. 491) notes that "the ultimate end and test of all inquiry is the transformation of a problematic situation into a unified one. Inquiry is the tension between the relatively stable (or habitual) and the strongly variable" (Flowers and Murphy 1977, p. 840). Many of the assignments in 5304b are designed to create problematic situations which facilitate the transformation. Situations (e.g., requirements to do and make) are created which evoke real doubt and thus disequilibrium. As students try to figure out "what the heck is going on?" Methods such as the notebook are employed (more doing and making) which facilitates the movement toward the unified, more complex equilibrium (it came together in the end).

The Notebook Method

At its best, the notebook method controls inquiry as it intensifies the student's doubt stage, clarifies the problematic situation, and enables the transformations which are essential to pragmatic inquiry. Flowers and Murphy (1977, p. 851) note that the first stage of inquiry occurs when "there is the indeterminate or problematic situation which is non-reflective but which triggers the process of reflection." The first stage of inquiry is the most important because recognition of the indeterminate and the willingness to feel real doubt are major stumbling blocks to inquiry.

As the students construct their notebook, the first stage issues are reinforced through *Read-Write-Think-Connect to Experience*. Reading and taking notes (writing) on the scholarly literature is important, because the students are usually inundated with new ideas and conflicting points of view. The process of taking detailed notes helps the ideas and content to sink in. My sense is that note taking taps into visual and kinesthetic intelligence (Gardner 1983). Ideally, the reading and writing initiate Peirce's doubt stage.

Charles Sanders Peirce[20] emphasizes that inquiry begins with doubt. For Peirce (1958a, p. 95), inquiry is a movement from something already known to "something else which we do not know." He describes a cycle which begins with belief then moves to doubt and returns to belief.

> Belief is not a momentary mode of consciousness; it is a habit of mind essentially enduring for some time, mostly unconscious; and like other habits, it is [until it meets with some surprise that begins its dissolution] perfectly self-satisfied. [Peirce 1958a, p. 95].

Thus, inquiry cannot occur when habits of mind are "fixated" in belief—a state of mind where people are "impervious to fresh evidence" (Weiner 1958, p. 91).

Doubt is the "uneasy and dissatisfied state from which we struggle to free ourselves and pass onto the state of belief" (Peirce 1958a, p. 99). Doubt is associated with Dewey's indeterminate situation. Dewey uses terms like "panic," "lost our heads," "confused," "disturbed," and "troubled" to describe the "personal side" of the doubt stage (Dewey 1938, p. 105). For Peirce (1958a, p. 101) doubt must be "real and living" for inquiry to happen. "Genuine doubt always has an external origin usually from surprise" (Peirce 1958d, p. 207). Peirce goes on to say that people[21] who employ the pragmatic philosophy of science invent "a plan for attaining doubt, and put it into practice although this may involve a solid month of hard work" (Peirce 1958d, p. 214). The activities involved in making the notebook are part of Peirce's "plan for attaining doubt."

One might note, that Peirce and Dewey's emphasis on the role of doubt is unusual in social science scholarship. Social scientists are rewarded when they find a widely applicable explanatory theory. Successful theories become beliefs and using Kuhn's (1962) insight—paradigms. The application of paradigms is associated with certainty and confidence. Milton Friedman's *Capitalism and*

Freedom (1962), is an extreme example of an applied belief system/paradigm. Using "belief" as a frame of reference, one would expect the doubt stage to be viewed as a stumbling block to truth and, or a trivial, occasional, element of inquiry. The norm of certainty (belief) is reinforced in the traditional lecture classroom. In class, students are generally introduced to a topic at the confident "belief" state. The doubt stage that led to the material in the textbook is unacknowledged (in the shadows). When students begin empirical inquiry, they may interpret the doubt stage as a signal that their efforts are misplaced. Rather, doubt should be embraced as a sign they are moving in the right direction.

Clearly the reading and writing components of the notebook method enable doubt. The real lynch pins of doubt, however, are *Connecting* (the readings) *to Experience* through reflective thought (*Think*). Most SWT MPA students work full-time and are encouraged to find their research question or problem through work-related experience. They use their work environment/experience as the source of both "problem" and "data." According to Dewey (1938, p. 499) "any problem of scientific inquiry that does not grow out of actual [or 'practical'] social conditions is factitious"—*Connect to Experience.*

Kaplan notes that "not everything can be problematic at once, nowhere in science do we start from scratch. There is only one place from which we can start [citing Peirce] and that is from 'where we are'" (Kaplan 1964, p. 86). Connecting to experience represents the starting point. The frame of reference to place the scholarly literature.

Students stimulate "real", "felt" doubt by applying the readings to their experiences.[22] My hope is that the juxtaposition of experience and the literature will stimulate critical thinking or reflective thought. In *How We Think*, John Dewey (1910) examined the role of thought in inquiry.[23] According to Dewey (1910, p. 80) "to think means ...to bridge a gap in experience, to bind together facts or deeds otherwise isolated."

"The essence of critical thinking is suspended judgment; and the essence of this suspense is inquiry to determine the nature of the problem before proceeding to attempts at its solution" (Dewey 1910, p. 74). Peirce refers to this process as reflective thought. A person who is reflective is naturally open to consider facts that don't correspond to their belief system (Peirce 1958b, p. 121).

Another way of describing suspended judgment is in Peirce's words the "experimenter or laboratory mind" (Peirce 1958c, p. 180). The cardinal rule of experimentation is that "we must accept the outcome whether or not it is to our liking." When we submit "to the judgment of experiment we correct the presumption of the demand that the world conform to our expectations" (Kaplan 1964, p. 145).[24]

Dewey (1938, p.107) notes that the indeterminate situation itself has rhythms or stages. First, there is the search for the problematic situation. This is really the point of the notebook method. "The indeterminate situation becomes problematic in the very process of being subjected to inquiry. ...To see that a situation requires inquiry is the initial step of inquiry." Reflective thought which

connects to experience should enable an individual to focus and *see* that a "situation requires inquiry."

The size and scope of the SWT Applied Research Project makes it much different from a typical "term paper." When a student is required to write a traditional term paper there is seldom the need to define a problematic situation in the context of their experience/work environment. The student's inquiry stops as a unified situation when the paper is complete. The two-course sequence of the ARP, on the other hand, requires that the student search the environment for a research question. The need to connect the literature with the work environment allows for a deeper kind of inquiry. This indeed is the first step in defining their research question and the nature and scope of their empirical inquiry.

Reflective thought combines what Dewey describes as concrete and abstract thinking.

> *When thinking is used as a means to some end, good or value beyond itself, it is concrete; when it is employed simply as a means to more thinking, it is abstract.* (Dewey 1910, p. 138).

In a discussion that mirrors the theory-practice debate in PA, Dewey says that the "truly practical man" uses both types of thinking. It is important to give the mind "free play about a subject matter without asking too closely ...for the advantage to be gained." If concrete thinking is used exclusively the horizon becomes too narrow and in the long run is self defeating. "It does not pay to tether one's thoughts to the post of use with too short a rope" (Dewey 1910, p. 139). The purpose of the notebook method is to lengthen the tether, and, in so doing, encourage the student to suspend their judgment and "escape the limits of the routine and custom" (Dewey 1910, p. 139).

Clearly, reflective thought is a critical ingredient for "felt" or "real" doubt to emerge. When students suspend judgment, preconceived beliefs about the nature of their jobs[25] seldom fit perfectly with the literature. After about a month, I begin to observe manifestations of the "real", "felt" doubt among the students. They express their confusion and panic in the first 15 minutes of each class. To the surprise of the class, I am generally pleased about the general state of confusion because I know that real inquiry is progressing. We discuss the role of doubt in inquiry vis-à-vis Dewey and Peirce. I ask them to separate the confusion from anxiety. Finally, I stress it should all come together in the end if they give the notebook a good faith trial.

Using Hickman's insights, one could also call the notebook method a *tool* of reflection/inquiry. Reflection involves going outside the immediate situation to find a lever for understanding.

> There is a search for a tool with which to operate on the unsettled situation. The tool becomes part of the active production skill brought to bear on the situation. The purpose of the tool is to reorganize the experience in some way that will overcome its disparity, its incompatibility, or its inconsistency (Hickman 1990, p. 21).

This is the very purpose of the Notebook Method. Hickman (1990, p. 8) notes that traditionally, philosophy had been concerned with human doing and had paid little attention to human making. Dewey, on the other hand, always sought the "connections and continuities between humble and quotidian technological practices and their refined, enriched manifestations."

The point of the above discussion is to highlight first-stage-of-inquiry issues. The Notebook Method is one of many possible tools to facilitate inquiry during the early stages. This method helps the student to focus the topic as well as to find and refine the research question/problem. The Notebook Method in tandem with class discussion obviously works for most MPA students. How a particular scholar copes or recognizes these first stage issues probably depends on a host of factors such as, the maturity of the scholar, learning style, and personality type. I use the notebook method for every article I write. My sense is that many Ph.D. students (in and outside the field of PA) would benefit from using this tool.

Conceptual Frameworks

Ideally, when the student has completed the notebook and the first draft of their literature review, they have their topic and have begun to define the problematic situation. Even before the research question becomes concrete, the students generally know the mode (survey, document analysis, structured interview) of research they intend to use. The big cloud that hangs over their head is the conceptual framework. Just what is this mysterious, abstract, conceptual framework? Why is it needed?

The students misgivings are well founded. Conceptual frameworks are amorphous. Multidisciplinary settings add to the problem because there are so many potential frameworks. Further, the conceptual frameworks easiest to recognize are associated with traditional explanatory research. This kind of empirical research posses problems because, in practice, the framework is often implicit and obscured by complex statistical analysis.

Conceptual frameworks really operate on two levels. One operates at a meta-level. Examples might include, public choice theory, systems theory or bureaucratic politics.[26] The second is a more narrowly defined abstract framework that usually fits within meta frameworks. Micro conceptual frameworks connect to the specifics of controlled inquiry. These are the detailed frameworks that are associated with the concrete problems of management and policy. These frameworks are summarized in Figure 1. In the best of all possible worlds, the concrete micro conceptual framework's are nested within a larger frameworks which the student find as they build their notebook and/or which are introduced to the student during their course work. My sense is that failure to distinguish between meta and micro conceptual frameworks is a major source of confusion for all.[27]

Over the last few years, I have concentrated effort on addressing the question "What the heck is a conceptual framework anyway?" When I began to *see*

conceptual structures through the lenses of pragmatism the answers started to fall into place. The journey began with William James's Hotel Corridor Metaphor. "Pragmatism lies in the midst of theories like a hotel corridor. All the rooms open out to it and all the rooms can be entered. Pragmatism *owns* the corridor and the right to move freely from room to room" (James 1907, p. 54). Thus, there are many potential theories. And, the purpose of theory is linked to the problematic situation. Ownership of the corridor and the freedom to walk from room to room joins theory and practice.

James (1959, p. 4) has another practical justification for theory. People who use theory *work smart* because it takes "far less mental effort" to understand the complexity of the world. It is a "labor-saving contrivance." Like any good organizing device, theory makes life easier. This is a point I emphasize throughout the course.

Since theory or conceptual structures are used to solve problems they can be viewed as *instruments* or problem solving *tools* (Hickman 1990, p. 102). This conception of theory fits well with the insights of Dewey discussed earlier. Instead of the traditional classical Greek hierarchy (Theory, Practice, Product) theory is viewed as an instrument that links practice and product. If one returns to the pragmatic vision of PA, theory clearly is a useful tool for administrators responsible for the "products" of a living democracy. Practitioners are generally intrigued with the notion of theory as tool. This notion moves theory out of library books and class discussion and into their experiential world.

One key point is that the conceptual framework emerges from the problem.

> The subject-matter-of hypothesis is first suggested by the original *problem* and is then tested and revised on the ground of its consequences. The guiding criterion is the power of these consequences to promote solutions of the *problem* in hand [Dewey 1938, p. 316] [italics added].

One of the most practical purposes of theory, from my perspective, is that it organizes the results chapter of the ARP.[28] Kaplan (1964, p. 268) points out that

> every theory serves, in part, as a research directive. Theory is useful because it guides the collection of data and their subsequent analysis, by showing us beforehand where the data are to be fitted, and what we are to make of them when we get them....Without a theory, however provisional or loosely formulated, there is only a miscellany of observations, having no significance.

When theory is ill-defined, its relationship to the data becomes vague and uncertain. The five concrete conceptual frameworks developed in this class can be observed in different forms in at least three chapters of the ARP. When data is organized using the conceptual framework as a guide the final paper is more analytical.

It is clear that the choice of a conceptual framework (which tool?) is directed by the nature of the problem. But how do conceptual frameworks help organize the observed world and connect it to the research problem?

Dewey (1938, p. 402) compares conceptual frameworks to maps. Maps are used to solve the problem of getting from one place to another. They also represent and abstract from reality. If correct, maps enable navigation within reality.

> Given the map as a pattern of relations, the "relation" of the pattern to that of the country mapped is functional. It is constituted through the intermediation of the further operations it directs—whose consequences, moreover, provide the means by which the validity of the map is tested. The map is instrumental to such operations as traveling, laying out routes for journeys, following movements of goods and persons.

Like maps, the *theory* in empirical inquiry *must* have a directive function. "When the directive function of the map is left out of consideration it must be said that no map is 'true'" (Dewey 1938, p. 402). True maps produce "consequences that are intended to be served by the map" (Dewey 1938, p. 403).

From Dewey's perspective "problems are constantly changing and therefore require conceptual tools which must be constantly refashioned to meet the new demands" (Flowers and Murphy 1977, p. 812). Hence, there are two kinds of tools, ones that can be pulled out of the tool box (ready made) and those that must be created. Indeed, Dewey maintains that

> there is the same sort of advantage in having conceptual frameworks manufactured and on hand in advance of actual occasions for their use, as there is in having tools ready instead of improvising them when need arises (Dewey 1938, p. 136).

Thus, as a problematic situation becomes identified, the student must search for a theory or tools to help connect the problem to observed data. The theory can already exist (pick a tool from the tool box) or it must be improvised (make the tool). The development of theory is called theorizing (Wamsley 1996).

For many years, I have used the traditional research purposes (exploration, description, explanation) to help students narrow their topics. These research purposes are described in popular research methods texts like Earl Babbie's (1991) *The Practice of Social Research*. Somehow, it dawned on me that the key to addressing, "What the heck is a conceptual framework anyway?" was to acknowledge that there were lots of different types of conceptual frameworks. It then became clear that there was a natural grouping of research purpose and conceptual frameworks (See Figure 1). The sorting was helpful because almost every concrete "problematic situation" can be categorized into one of Babbie's traditional research purposes. The classification of conceptual frameworks transformed the function of the "research purpose." The research purpose now mediated between the "problematic situation" and the "conceptual framework."

I now answer the question "What the heck is a conceptual framework anyway?" by using Figure 1 and saying, "it depends." For example, if a student wants to learn about the attitudes of employers about "School to Work Programs," the purpose is

description and the conceptual framework is *categories*. On the other hand, if the student wants to know whether regular games of basketball among city fire fighters will enhance their cardiovascular fitness, the purpose is *explanatory* and the conceptual framework is a *formal hypothesis*. The next section discusses each type of conceptual framework.

Working Hypotheses

The working hypothesis was one of my first applications of pragmatism. The term began to creep into class discussion and in one-on-one meetings. In 1995, I got some critical evidence that working hypotheses were extremely compatible with research in public administration. In the summer of 1995, six of my students presented their ARP at the, American Society for Public Administration National Conference. That fall, *PA Times* (Nov. 1995, p. 9) identified two of the student papers among 25 "Cutting Edge Research" conference papers. Both projects used working hypotheses as their conceptual framework (Kaufmann 1993, McFarland 1996).[29]

The *exploratory* research purpose is linked with the conceptual framework *working hypotheses*. Exploratory research is associated with problems that are in their early stages. It is used when the topic or issue is new (Babbie 1989, p. 80). Working hypotheses signal that conceptualization is in its early stages. Dewey employed the term "working hypothesis" frequently. Hypotheses are often useful, not because they are true or false, "but because, when they are taken to be provisional, working means of advancing investigation, they lead to discovery of other critical facts" (Dewey 1938, p. 142).

According to Kaplan (1964, p. 88) *working hypotheses* serve as guides to organize the investigation. They provide something to go on. "The working hypothesis is not a guess at the riddle, a hunch as to what the answer might be. It is an idea ... about the next steps that may be worthy of taking." The working hypothesis formulates a belief about the direction of inquiry but not necessarily its ultimate destination.

One of the keys to the success of working hypotheses directing inquiry in formal empirical research is to establish the connection between the research question, the working hypothesis and the types of evidence used to test the hypothesis. At the proposal stage, I insist that the student be able to identify the sources of evidence used for each hypothesis. Most of the time the sources of evidence are archival records, documents, interviews, focus groups, direct observation, or questionnaires. In the case of interviews, questionnaires, and focus groups the students are expected to link the specific questions or topic areas to each working hypothesis. Finally, the working hypotheses are used to organize the evidence in the results chapter.

The students find the working hypotheses using *Read-Write-Think-Connect to Experience*. This process begins with the notebook, continues through the formal

paper (literature review) and the formal proposal. The working hypotheses need to incorporate information from the literature and experience. In practice, most students use broad categories to classify working hypotheses (the categories are usually drawn from the literature and a meta framework) and then a series of subhypotheses within the broad category are used to connect to the data or evidence (the link to experience).

For example, Laura Sheridan (1996) examined a partnership (The Alliance Schools Project) between two local elementary schools and a private non-profit advocacy group. She used local control, local autonomy and student achievement as her broad categories. The working hypothesis associated with *local control* was "The Alliance Schools Project promotes processes of local control (democratization)." One of four subhypotheses included "Input from the community/parents is encouraged at Alliance Schools." Evidence was collected through interviews with parents, teachers and administration as well as documents such as school newsletters, posters, and PTA meeting minutes.

Returning to the tool metaphor, conceptual frameworks can either be "found" or "invented." In other words, existing theory is used or the theorizing process is employed. Laura "found" the categories (broad working hypotheses) in the literature. She "invented" (used the theorizing process) the subhypotheses which incorporated both the literature and her knowledge of the experiential context. Her results chapter was organized using the broad categories local control, local autonomy, and student achievement. In this case, it is possible to see the instrumental role of theory as an organizing device.[30]

It should be noted, that while pragmatism is well suited as a philosophy of science, its founders did not intend pragmatic insights to be limited to formal empirical research. Pragmatism is a philosophy with wide applications. The working hypothesis is one of those organizing devices that easily cross the boundary into the everyday world and particularly to the day-to-day activities of management. In some sense, working hypotheses are diagnostic tools. When a medical doctor is confronted with a sick patient, working hypotheses and evidence (fever, blood count, etc.) are used to make a diagnosis. Detectives use working hypotheses as a guide to solve crimes.

My sense is that managers use crude forms of working hypotheses all the time in the course of their jobs. Working hypotheses would be useful for any problem that fell outside standard operating procedures (in Peirce's terms, outside effective organizational habit). In the fast paced world of public management, working hypotheses are similar to the small questions that *direct* an investigation (making it controlled inquiry). A manager would benefit from the knowledge of working hypotheses because the theorizing process necessary in controlled inquiry would be more conscious—less in Kaplan's "twilight region."

Categories

In many ways, categories are the easiest and most basic conceptual framework to see/use. *Categories* are linked to the *descriptive* purpose. Kaplan (1964, p. 50) discusses the process of conceptualizing the subject matter.

> In this process the things studied are *classified* and *analyzed*: several things are grouped together and particular things assigned to the several groups to which they belong...Things are grouped together because they resemble one another.

Hickman (1990, p. 129) discusses the "conceptualist"[31] way of grouping. Conceptualist's argue that "singular things may be grouped together into classes on the basis of certain of their natural properties." The classes themselves are conceptual, "formed when the mind puts together things that naturally go together,...these mentally constructed classes then serve as sorting bins for single things." Conceptualists usually treat conceptual classes or kinds as "things in their own right, capable of having certain properties of their own." Dewey's view of categorization is similar to the conceptualist, however, he "located generality in the activity of producing inquiry," in operations performed with a view toward particular inquiries. "Sorting is done on the basis of need to draw certain inferences to *solve certain problems* to construct or produce instruments that will be effective in the resolution of experienced difficulties" (Hickman 1990, p. 129) (italics added). In other words, classification exists to serve a purpose.

For Dewey (1938, p. 61), the distinctions needed to place "single things" in a sorting bin is common sense. The power to discriminate the factors that are relevant and important in given situations, is the power of discernment. In a proverbial phrase, it is the "ability to tell a hawk from a hernshaw[32], chalk from cheese, and to bring the discriminations made to bear upon what is to be done and what is to be abstained from, in the ordinary affairs of life."

Kaplan (1964, p. 50) makes a distinction between artificial and natural classification. "A natural grouping is one which allows the discovery of many more, and more important resemblance's than those originally recognized" (inference). Kaplan notes that classification of books by size and weight is "artificial," while classification based on content is "natural." Artificial classification schemes often serve key purposes. The printer and the freight agent have claims as legitimate as the librarian's. Most artificial classification schemes, however, have limited uses. The freight agent and printer "stand nearly alone in their interests; the librarian is joined by every reader" (Kaplan 1964, p. 51). Natural classifications have the greatest potential for inference, however, many inelegant, artificial classification schemes such as those used by the printer and freight agent are applicable to day-to-day management activities in the public sector.

Classification is a powerful conceptual tool which is often not *seen* by practitioners. Raising the students consciousness about classification as an organizing tool is a major benefit of this approach. Categories are intuitively appealing because

they are easily linked to the familiar "Survey Research." My sense is that a typical practitioner is oblivious to the connection between theory and a questionnaire. Hence, surveys used by governments are often unfocused. Categories as an explicit conceptual tool have considerable applicability because they *give* questionnaires a conceptual framework, and as a result, coherence.

Many students do attitudinal survey research. Often the best or only literature available on these topics consists of "expert-opinion." The student's challenge is to take the vast array of opinion and organize it into categories (find and label the bins). Through *Read-Write-Think-Connect to Experience* the purposiveful categories begin to emerge. The more detailed information fits in the categories (items fit in the bins). Often the student can develop questionnaires from the categories, the literature and experience (when they can argue that the literature left something important out). If they can, I prefer they cite a reference for each item in the questionnaire. It is common for the student to submit their questionnaire for agency approval. Interestingly, a questionnaire built this way has never been rejected. Students have even been asked to join agency questionnaire review committees.

The results of survey research are often incoherent and thus frustrating to read. This occurs most often when the author discusses the findings item by item. The little picture overwhelms the big picture: the trees are in focus, but not the forest. The explicit use of categories to organize the items overcomes this problem. The categories become the subheadings in the results chapter.

It should be noted that categorization is flexible. If it becomes clear that a given "categorical scheme" is incomplete, or incompatible with the research question, the categories should be revised. The sorting bins are given new labels and the materials inside resorted. Categories are a way to organize the "stuff of experience" in order to resolve a problem or answer a "what" question. The categories (labels) do not represent truth.[33]

The power of this approach is illustrated through Ralph Revello's (1996) experience. He wanted to describe the state of computer security in Texas county government. He explored the mostly expert-opinion literature and developed a set of categories dealing with computer security issues. The categories were (1) Hardware Security, (2) Software Security, (3) Data Security, (4) Personnel Security, (5) Security Evaluation and Auditing. Each category had 8 to 16 items within it. Unfortunately, he received an extremely disappointing response rate. At first it seemed that his paper was marginal at best. This was until County Commissioners began to read the paper. The coherent organization and nontechnical language made the ARP easy for the elected officials to grasp computer security issues. Ralph's questionnaire was transformed into an assessment tool. Counties could use it as a checklist to evaluate their computer security needs.[34] Ralph had transformed his conceptual framework from *categories* to a *practical ideal type.*

Practical Ideal Type

I have recently added the *practical ideal type* as a conceptual framework. The four traditional research purposes didn't do justice to some common PA research problems. Descriptive research is applied easily to attitudes, explanatory research incorporated impact evaluation, exploratory research was a grab bag which facilitated analysis of problems in their early stages. A conceptual framework equipped to address many of the issues raised by formative program evaluation was missing. When I uncovered Peter Manicas' (1987, p. 131) discussion of Max Weber and ideal types, things began to fall into place. Weber's ideal type was constructed not as truth, but as a way to *understand* reality. I thus added Understanding and Practical Ideal Type to my list in Figure 1.

Dewey (1938, p. 303) stresses that "ideals...are not intended to be themselves realized but are meant to direct our course to realization of potentialities" in experience. Kaplan (1964, p. 83) refers to Weber and describes an ideal type as a construct. It "specifies something with which the real situation of action is compared and surveyed for the explication of certain of its significant components." From a PA perspective, ideals are useful because they provide a point of departure for policy recommendations.

To sanctify the ideal, and to disparage the actual because it never copies the ideal, misses the point.

> A vision is not a scene but it can enable us to construct scenes which would not exist without it.... To ignore or depreciate ideal because it cannot be literally translated into existence is to acquiesce not only to things "as they are"—as is something said—but also to things "as they are not" because all things that *are* have potential (Dewey 1938, p. 304).

Practical ideal types can be viewed as standards or points of reference. It should be noted that this conceptual framework is generally organized by category. And, the elements of the ideal type are not rigidly fixed. There is more than one useful way to envision the "ideal."

In public administration, outcomes can be difficult to measure. As a result, standards associated with service delivery are often developed as assessment mechanisms. Practical ideal types provide benchmarks with which to understand (and improve) reality. For example, accreditation bodies such as NASPAA use standards to assess master's degree programs. These standards (laws, regulations) can be viewed as ready made conceptual frameworks (existing tools). On the other hand, when Ralph Revello developed his categories, he inadvertently constructed a practical ideal type that could be used by *individual* counties to address their specific computer security needs (he improvised the tool).

The Formal Hypothesis

Explanatory research and the formal hypothesis are the mainstay of social and policy science. The philosophies of science most often associated with empirical, explanatory research are logical empiricism and logical positivism.[35] Both incorporate the hypothetico-deductive model. It should be noted that within the scope of explanatory research, there are great overlaps between pragmatism and logical empiricism and logical positivism. Explanatory research addresses the "why" question and uses the formal hypothesis as its conceptual framework. At its most basic, the formal hypothesis takes the form "If X then Y." Dewey (1938, p. 381) maintains that a hypothesis is concerned with what is *possible*. "A proposition regarding possible is indispensable to inquiry that has scientific standing. The hypothesis is formulated in an abstract *if-then* proposition." The primary meaning of a hypothesis is derived from its "position and force in common sense situations of use-enjoyment" (Dewey 1938, p. 425). The emphasis on use-enjoyment and common sense are factors that distinguish pragmatism as a philosophy of science.

Although explanation and causation are clearly different, for purposes of management and policy research, explanation approaches causation (it answers the "why" question). One might restate the above hypothesis as "X causes Y." Instead of viewing a means-ends continuum commonly associated with causation, Dewey (1938, p. 460) envisions a *means-consequences* continuum. "Propositions that deal explicitly with subject-matters that are connected with one another as *means* to *consequences* have a claim to be called *causal* propositions in a distinctive sense (italics added)."

Students are often confused about hypotheses because their first academic experience with hypotheses is in a statistics class where they learned about the convoluted null hypothesis. As a result, the importance of the research hypothesis and role of the conceptual framework as a method of organizing data to address a "problematic situation" is obscured.

Although relatively few of my students use an explanatory framework in their ARP, I discuss formal hypotheses extensively in the course. The major points of the lecture are reinforced through class assignments which require the dissection of journal articles that use formal hypotheses. My teaching objective is for the student to begin to *see* formal hypotheses as the organizing engine that drives explanatory research. To do this, the students must *see* two hypotheses. One is associated with the abstract theory, the other is operationalized or interpreted. "An adequate empirical interpretation turns a theoretical system into a testable theory. The hypothesis whose constituent terms have been interpreted become capable of test by reference to observable phenomena" (Hemple 1952, p. 35). Students have trouble distinguishing between the theoretical hypothesis and the interpreted hypothesis. This is a problem because

the whole system floats, as it were, above the plane of observation and is anchored to it by rules of interpretation. These might be viewed as strings which are not part of the network but link certain points of the latter with specific places in the plane of observation. By virtue of those interpretative connections, the network can function as a scientific theory (Hemple 1952, p. 36).

A floating system, anchored by "interpreted" strings. No wonder the typical, concrete MPA student has trouble making these distinctions! Once the student can make these distinctions, the mediating role of the hypothesis (between the abstract and the observable) becomes clearer.

According to Dewey (1938, p. 381), "An hypothesis concerns what is *possible*, and it then formulates a rule and method of experimental observation." Dewey's rule and method of experimental observation are equivalent to Hemple's "string anchors." Using more familiar language, the interpreted (or operationalized) hypothesis includes independent and dependent variables. Generally independent and dependent variables are measured quantitatively. Hence, quantitative measures are collected as evidence to test the interpreted hypothesis. Issues of sampling, probability and generalizability arise. Inferential statistics become the quantitative method most often used to test the hypothesis. The null hypothesis is placed in proper perspective.

All effective conceptual frameworks perform this mediating role. I use existing explanatory research to illustrate this point. Later, I extend the insights from explanation to research which use different purposes.

From a PA perspective, explanatory research is important because all impact oriented program evaluation is explanatory. All impact program evaluations use formal hypotheses. In its most general form the underlying hypothesis for all outcome oriented program evaluation is, "If program X then outcome Y" or "Program X causes outcome Y." If this causal (or explanatory) link were not anticipated then what is the justification for the program in the first place? Clearly, experimental and quasi-experimental design are just different ways of testing the formal hypothesis: "if X then Y." The context and availability of data dictate, for example, whether a "pre-test, post-test control group" or a "post-test only comparison group" design is used. The dependent variable is always an outcome measure. The threats to internal validity commonly associated with impact evaluation research are more easily understood when the underlying hypothesis is *seen*.

Models

Since the use of models is extremely rare among my students, I spend very little class time on this conceptual framework. I view models as more complex formal hypotheses. For example, a problem which would require multiple hypotheses and use an extensive multivariate framework would be classified here as a model. The principles of formal hypotheses all apply. The hypotheses and corresponding

methodology, however, are vastly more complex. My sense is that when models are used as conceptual frameworks there is often a blending of the micro and macro conceptual framework. If POSI 5304b were taught at the Ph.D. level, models would appear more prominently in the discussion. I also include analytic techniques such as cost benefit analysis and cost effectiveness analysis as models. These complex techniques are predictive by nature. They predict the most efficient alternative. In addition, they have their roots in highly developed "meta" conceptual frameworks.

It should be noted that in practice Applied Research Projects often have more than one purpose. Almost half of the ARPs incorporate exploration or exploration along with another purpose, most commonly description (Almaguel 1997, p. 43). Hence, the papers themselves are not rigidly bound by a single purpose or conceptual framework.

CONCLUSION

This chapter uses pragmatism as a philosophy of science to address current issues in public administration research. Two tools of inquiry are introduced. One tool, "The Notebook Method," is designed to enhance the first stages of inquiry. Ideally, the class, (*Read-Write-Think-Connect to Experience*) in conjunction with the notebook stimulates the transformations needed for pragmatic inquiry. The second tool, is conceptual/abstract. Five different conceptual frameworks are developed as instruments to organize empirical inquiry.

My sense is that conceptual frameworks, like working hypotheses, categories and the practical ideal have great applicability to the day-to-day management problems of practitioners. They are also well suited to a three-credit master's level capstone project. Most formal, research, methods courses implicitly assume "explanatory" research as they develop topics such as sampling, survey design, content analysis, experimental design, multivariate statistics. By ignoring exploration, description and understanding as well as the conceptual frameworks that support them, these texts leave out important connections to day-to-day management. Managers are not given a chance to see how theory can help them to get organized to address a "problematic situation."

Practitioners trust knowing through experience. Probably, few practitioners consciously use the approach to inquiry that marks the pragmatic philosophy of science. By raising practitioner-consciousness research in PA may have its most profound influence on the way practitioners newly "*know*" within their experience. The philosophy of pragmatism enables practitioners to employ some of the tools (making and doing) of inquiry, as they sort out experience and act.

APPENDIX A

The Notebook Method of Writing Papers

Posi 5304b

Patricia M. Shields

The notebook method is a method to write papers. With it, you can organize information and use short periods of time effectively. It facilitates analysis and integration of the readings. Students who use this method swear by it. Also, the method is an excellent organizing tool and can be adapted to work or job related projects.

Use of this method is a requirement. Bring the notebook to each class. Ten to 15 minutes of each class will be spent discussing your progress.

*1. Buy a three ring notebook. Pockets on the side are helpful. In this notebook you will keep most information relevant to your paper. For example, keep this handout in the notebook. There are a few essential items which must be included in the notebook when you hand it in. These items are starred (*).

*2. In the front, keep a "things to do" list. Include all tasks you need to complete. Try and insure that the items on the list take different amounts of time. For example, one task, such as reading a short article might take 15 minutes. Another task, such as finding 5 articles, might take an hour and a half. The list should include the articles to read and write up. Date the item when the task is completed.

3. Keep a list of the articles you wish to find. Many of the articles will be located through standard bibliographical tools in the library or from footnotes in other references.

4. Keep any relevant phone numbers, e-mail addresses, addresses or dates (personal timetable). Keep items referred to often.

*5. Keep a running bibliography. If you are using a computer, keep it on disk. If you do not have access to a computer, put the references on index cards. Use Turabian. The cards are easily alphabetized later.

*6. Keep your notes on the articles in another section of the notebook. These notes can be written by hand or on the computer. In either case, use the format attached. Key information on the notes include the authors last name, the year, the page and when quoting indicate through quotation marks. The notes must be placed in your notebook in alphabetical order by author's last name.

*7. Make at least two outlines of your paper. Begin the outline with a brainstorming list. What ideas, facts, critical points, concepts, hypotheses, do you want to include in the paper? Let your mind run free. Be creative. Then,

review the list. Write a sentence or two which indicates the purpose of the paper. Review the list in light of the purpose. Adjust the list to take into account your purpose. You are now ready to begin the first draft of your outline (major headings). A pattern should emerge from the list. There will be natural groupings of topics. The first and last major heading are obvious; Introduction which includes the paper's question or purpose and Conclusion or Summary. The other major headings will be developed from the groupings in your brainstorming list. Try and come up with a broad category that will describe the groupings. You now have the first draft of your outline. The second draft is more detailed. Leave plenty of room between items on the outline. You are getting ready for the next step in the process.

Now a review of the major steps in the outlining process.

a. Brainstorm list (You may keep a list as you go along.)
b. Statement of purpose. I want to see this in the paper.
c. Find the natural groupings in the list. What fits together, what is the level of detail.
d. Start your outline, include only the major headings. A 20 to 25 page paper should include no more that five to eight major headings including the introduction and conclusion.
e. Second draft of outline. Lots more detail. Take items from the brainstorm list to form subheading within the larger groupings.
f. Leave lots of space between sections in the outline.

*8. Go to the beginning of the alphabetized references that are in another section of the notebook. Start with the first article, review the notes and place the relevant information from the reference in the outline in the space provided. The relevant information might be a key word or a phrase but always includes the author's name and page. Proceed to the next article until all reference material are incorporated into the outline. This stage is critical. It is important to be flexible. Going through the references you may discover that a topic has been omitted from the outline. Here you are free to amend the outline to accommodate any new insights. Also many of the references will be useful in more than one section of the outline. This helps to create a well integrated paper. You are now ready to write. The outline headings can be used for headings in the paper.

Don't forget your paper must have a purpose. The paper will evaluated in light of the purpose.
Example of how to write up an article

CHARLES LEVINE PAR 1986
"THE FEDERAL GOVERNMENT IN THE YEAR 2000: ADMINISTRATIVE LEGACIES OF THE REAGAN YEARS"

195   Three aspect of the Reagan legacy on the Adm state (1) the role and reach of Gov in Am's mixed econ (2) the organizational and adm apparatus that is used to carry out gov's role (3) the role of gov employees—career civil servants and political appointees—in the policy process

196   3 dimensions of adm state (1) what gov shd do? (2) How it shd do it? (3) who shd do it? there have been few major policy changes over the Reagn Adm yrs because our system is cumbersom and complicated

197   although the actual policies have changed only marginally the huge deficet and Reagans conservative philosophy result in the second legacy of the Reagan yrs "indirectly through the deficit, it has changed the dialogue surrounding gov from one of debating additions to the scope of gov activities to a focus on how to maintain the functions and fund the prgms that gov has already assumed."Sees arms control as a long shot way to take pressure off the def budget and hence the overall budget

198   AA 3rd legacy of the Reagan pres and perhaps the one that will have the most lasting effect has been to legitimize debate over the tools and techniques of policy implementation...dependence on third party providers... By insisting on greater reliance on contracting-out gov respon to pvt sec service provider, the use of user fees for gov ser, and other alternatser deliv mechanisms, the Reagan adm has accentuated the trend AWAY from the fed gov direct provision of services.

Levine, Charles. "The Federal Government in the Year 2000: Administrative Legacies of the Reagan Years." *Public Administration Review* 46 (May/June 1986): 195-206. **(This is the source—it is NOT necessary to include for your assignment.)**

ACKNOWLEDGMENTS

NOTES

1. For more information on the course see Shields, (1996a).

2. This class is also taught by other instructors.

3. For obvious reasons, I have generally used a variation on the question such as, "What the heck is going on here anyway?"

4. The ideas of these philosophers reinforce as well as diverge from one another. Overall, Peirce is characterized as an evolutionary realist, James as a radical empiricist, Dewey as a progressive instrumentalist and Addams as an experimental progressivist.

Peirce is described as an evolutionary realist because he maintained that both continuity and evolutionary change are necessary to understand experience. The commitment to continuity underscores his realism. At the same time, he recognizes the role of chance and spontaneity in experience. James' very different perspective, known as radical empiricism, focused on immediate experience. Dewey is described as a progressive instrumentalist because while Dewey did not view progress as inevitable, he did believe that responsible men and women could work together to control problematic situations in ways that rendered them productive (Hickman 1990, p. 200). Jane Addams contributed to pragmatism through her writings and work in the Settlement Movement. She is characterized as an experimental progressivist because, at Hull House, she worked for progressive reform using an experimental method. "The Settlement, then is an experimental effort to aid in the solution of the social and industrial problems which are engendered by the modern conditions of life in a great city" (Addams 1930, p. 125). Addams is particularly good link to Public Administration because she was a practitioner/manager who upheld a democratic ideal yet *acted* in the context of a flawed democracy.

5. This is most obvious when examining their view of truth (epistemology). In a footnote of *Logic: The Theory of Inquiry* (1938, p. 345) Dewey says that in his opinion Peirce's definition later cited is "the best definition of truth." Both saw ultimate truth as fixed. However, it is arrived at over time through continuous inquiry. It is "the opinion which is fated to be ultimately agreed to by all who investigate is what we mean by truth" (Peirce 1934, p. 268). Hence, in any one life time, truth could be provisional. Yet, it is real/fixed across time as a community continues inquiry.

Peirce's metaphysics is derived from his view that truth would be found across time through continuous inquiry. Hence, everything "which will be thought to exist in the final opinion is real" (Peirce 1959e, p. 82). Dewey incorporated continuous inquiry into his definition of metaphysics. He also included a search for nature's "generic traits" which are grounded in the "principle of continuity" and applied intelligence (Dewey 1960, p. 213).

6. This study group included William James, Chauncy Wright, Oliver Wendell Holmes, Jr. among others. It met in James or Peirce's study. (Feibleman 1946).

7. In addition, Benjamin Peirce (father of Charles) was the Superintendent of the United States Coast Survey.

8. The global positioning satellites of today help emergency vehicles during disasters much the same way coastal maps helped nineteenth century ship captains find their way.

9. First, geodesists depend heavily on instruments to do their work; second, the results of their efforts are instrumental to other objectives (e.g., ensuring that ships navigate around dangerous shoals).

10. It also may explain some of the conflicts that are inherent in academic departments—particularly political science departments and social science in general.

11. Dewey includes production of new theory as an element of scientific progress.

12. As stewards, public administrators are often involved in agenda setting. At a minimum dialogue between agency heads and legislators will shape the agenda. Thanks to Kenneth H. Ashworth for this insight.

13. The National Association of Schools of Public Affairs and Administration (NASPAA)is the accrediting body for the Southwest Texas Master of Public Administration (MPA) program. It should be noted that not all ARPs suffered from these criticisms. Even the excellent ARPs, however, generally took more than one semester to complete.

14. For a comprehensive analysis of the SWT Applied Research Projects between 1992 and 1996 see Almaguel (1997). The second reader for Ana's paper was the Dean of SWT's Graduate School. The paper and oral defense enabled Dean Willoughby to assess the MPA Program. Thus the paper was also an instrument of administration.

15. Many thanks to Kay Hofer, the late Frank Rich and Cynthia Opheim for their encouragement.

16. The class meets weekly in 15 three hour blocks.

17. Students with higher grades also seem to develop the most careful notebooks. It is possible that notebook quality is a proxy for student ability and willingness to work. It should be noted, however, the student authors of the best papers testify to the usefulness of the notebook.

18. A handout detailing the steps in the empirical research process is used.

19. Another issue that is discussed when the students are defining their topic is the nature of the assignment. The ARP is a three credit course. Thus, the students are advised to tackle research problems that can be addressed within a semester. This constraint often narrows the research question.

20. Peirce is the founder of pragmatism. These ideas are introduced in his 1877 threshold article, "The Fixation of Belief" (Peirce 1958a).

21. Peirce uses the label Critical Common-sensitists.

22. Both Dewey and James spent much of their career's trying to make sense of EXPERIENCE. James' *Psychology* (1890) is considered such a contribution because of the way he treated experience. For example, toward the end of his career James (1982) wrote *The Varieties of Religious Experience*. Dewey wrote three books with the term 'experience' in the title; *Experience and Nature (1925), Art as Experience* (1958), and *Experience and Education* (1938).

In *Experience and Nature*, Dewey (1925, p. 421) defines experience by pointing out that it is bound to the uncertainties of nature. "It reflects the traits of nature; it gives indisputable evidence that in nature itself qualities and relations, individualities and uniformity's, finalities and efficacies, contingencies and necessities are inextricably bound together. The harsh conflicts and the happy coincidences of this interpenetration make experience what it consciously is; their manifest apparition creates doubt, forces inquiry, exacts choice, and imposes liability for the choice which is made. Were there complete harmony in nature, life would be spontaneous efflorescence. If disharmony were not in both man and nature, if it were only between them, man would be the ruthless overlord of nature, or its querulous oppressed subject. It is precisely the peculiar intermixture of support and frustration of man by nature which constitutes experience."

23. In the Preface to *Logic*, Dewey (1938) indicated that *Logic* was an extension of the themes developed in *How We Think* (1910).

24. Before I read Kaplan's (1964) "Experiment" Chapter, I associated the term "experiment" with "experimental design." Kaplan's discussion broadened my vision to include the "experimental mind."

25. I am referring to "jobs" broadly. It also includes the policy areas that correspond to their agency.

26. Other meta theories common in Public Administration include: decision making theories (incrementalism, rational-comprehensive, multiple advocacy), behaviorism, organization theory, various federal theories, various legal theories and representational theory. For example see, Anderson (1997), Landau (1972), and Riemer (1983).

27. From a personal perspective, I have spent so much effort in the last few years trying to clarify the narrowly defined conceptual frameworks that I have often ignored the connection to the larger ones. This is a deficit I intend to address.

28. A well defined conceptual framework makes my job easier. It takes less "mental effort" to be consistent as I supervise as many as 14 ARPs a semester.

29. Jane McFarland's ARP was shortened and eventually published by the American Society for Public Administration (McFarland 1996).

30. Laura Sheridan's ARP is one of my favorites. It is also unique since she created her categories using themes developed by reading Dewey's works on education. The categories came from the meta

framework. Vince Luizzi, a Dewey scholar, and the Chair of SWTs Philosophy Department was her second reader.

31.   This approach is associated with logical empiricism.

32.   A hernshaw is a slang expression for a Common European Heron; a bird similar to a Whooping Crane.

33.   According to William James (1996, p. 2) "there is only one primal stuff of which everything is composed, and if we call that stuff 'pure experience,' then knowing can easily be explained as a particular sort of relation towards one another into which portions of pure experience enter. The relation itself is a part of pure experience; one of its 'terms' becomes the subject or bearer of the knowledge, the knower, the other becomes the object known."

34.   Ralph Ravello went on to speak to county commissioners at national and state conventions. He also won an award for policy research.

35.   See Ayer, (1952) for a classic discussion of logical positivism. See Hempel (1965) for a classic discussion of explanation in the logical-empirical tradition.

REFERENCES

Addams, J. 1930. *Twenty Years at Hull-House*. New York: The Macmillan Company.

Almaguel, A. 1997. "Research in Public Administration: A Content Analysis of Applied Research Projects Completed from 1992-1996 at Southwest Texas State University in the Masters of Public Administration Program." An Applied Research Project, Southwest Texas State University, San Marcos,TX.

Anderson, J. 1997. *Public Policymaking*. 3rd ed., New York: Houghton Mifflin.

Ayer, A. J. 1952. *Language Truth and Logic*. 2nd ed., New York: Dover.

Babbie, E. 1991. *The Practice of Social Research*. 6th ed., Belmont CA: Wadsworth Publishing.

Dewey, J. 1958. *Art as Experience*. New York: Capricorn Book.

Dewey, J. 1938. *Experience and Education*. New York: Macmillan and Co.

Dewey, J. 1925. *Experience and Nature*. Chicago: Open Court Publishing Co.

Dewey, J. 1910. *How We Think*. New York: D.C. Heath and Co.

Dewey, J. 1938. *Logic: The Theory of Inquiry*. New York: Holt, Rinehart and Winston.

Dewey, J. 1960. *On Experience, Nature and Freedom*. Indianapolis, IN: The Bobbs-Merrill Co.

Dracup, J. 1995a. "History of Geodetic Surveying: Part I the Early Years: 1807-1843." *American Congress of Surveying and Mapping Bulletin* (March/April): 15-19.

Dracup, J. 1995b. "History of Geodetic Surveying: Part II Following in Hassler's Footsteps." *American Congress of Surveying and Mapping Bulletin* (July/August): 22-27.

Feibleman, J. K. 1946. *An Introduction to the Philosophy of Charles S. Peirce*. Cambridge, MA: The MIT Press.

Flower, E., and M.G. Murphy. 1977. *A History of Philosophy in America*. New York: Capricorn Books.

Friedman, M. 1962. *Capitalism and Freedom*. Chicago, IL: University of Chicago Press.

Gardner, H. 1983. *Frames of Mind*. New York: Basic Books.

Hemple, C. G. 1965. *Aspects of Scientific Explanation and Other Essays in the Philosophy of Science*. New York: Free Press.

Hempel, C. G. 1952. *Fundamentals of Concept Formation in Empirical Science*. Chicago, IL: The University of Chicago Press.

Hickman, L. J. 1990. *Dewey's Pragmatic Technology*. Bloomington, IN: Indiana University Press.

James, W. 1996. "Does Consciousness Exist?" Pp.1-17 in *Pure Experience: The Response to William James*, edited by E. Taylor, and R. Woznizk. Bristol, England: Thoemmes Press.

James, W. 1959. *Essays in Pragmatism*. New York: Hafner Publishing Co.

James, W. 1907. *Pragmatism: A New Name for Some Old Ways of Thinking*. Cambridge, MA: The Riverside Press.

James, W. 1890. *Psychology*. New York: Henry Holt.

James, W. 1982. *The Varieties of Religious Experience: A Study in Human Nature*. New York: Penguin Books.

Kaplan, A. 1964. *The Conduct of Inquiry: Methodology for Behavioral Science*. Scranton, PA: Chandler Publishing Co.

Kaufmann, J. 1993. "Strategic Planning and Implementation." An Applied Research Project, Southwest Texas State University, San Marcos, TX.

Kuhn, T. 1962. *The Structure of Scientific Revolutions*. Chicago, IL: The University of Chicago Press.

Landau, M. 1972. *Political Theory and Political Science*. New York: The Macmillan Company.

Manicas, P. 1987. *A History and Philosophy of the Social Sciences*. New York: Basil Blackwell.

McFarland, J. 1996. "Between a Rock and a Hard Place: Downsizing in a TQM Environment." Pp. 14-19 in *Total Quality Management: Resource Paper Series*. Washington DC: American Society for Public Administration.

Peirce, C.S. 1958a. "The Fixation of Belief." Pp. 91-112 in *Charles Sanders Peirce: Selected Writings*, edited by P. Weiner. New York: Dover Publications.

Peirce, C.S. 1958b. "How to Make Our Ideas Clear." Pp. 113-136 in *Charles Sanders Peirce: Selected Writings*, edited by P. Weiner. New York: Dover Publications.

Peirce, C.S. 1958c. "What Pragmatism Is." Pp. 180-202 in *Charles Sanders Peirce: Selected Writings*, edited by P. Weiner. New York: Dover Publications.

Peirce, C.S. 1958d. "Issues in Pragmaticism." Pp. 203-222 in *Charles Sanders Peirce: Selected Writings*, edited by P. Weiner. New York: Dover Publications.

Peirce, C.S. 1958e. "Critical Review of Berkeley's Idealism." Pp. 79-88 in *Charles Sanders Peirce: Selected Writings*, edited by P. Weiner. New York: Dover Publications.

Peirce, C.S. 1934. *Collected Papers of Charles Sanders Peirce, 5*, edited by C. Hartshore, and P. Weiss. Cambridge, MA: Harvard University Press.

Rochberg-Halton, E. 1986. *Meaning and Modernity: Social Theory in the Pragmatic Attitude*. Chicago, IL: The University of Chicago Press.

Revello, R. 1996. "A Descriptive Analysis of Computer Security Measures in Medium-Sized Texas Counties." An Applied Research Project, Southwest Texas State University, San Marcos, TX.

Riemer, N. 1983. *Political Science: An Introduction to Politics*. New York: Harcourt Brace Jovanovich.

Seigfried, C.H. 1996. *Pragmatism and Feminism: Reweaving the Social Fabric*. Chicago: University of Chicago Press.

Sheridan, L. 1996. "The Alliance Schools Project: A Case Study of Community-Based School Reform in Austin Texas." An Applied Research Project, Southwest Texas State University, San Marcos, TX.

Shields, P. M. 1996a. "A System for Guiding Students in Research and Writing Applied Research Projects and Masters Theses." *Annual Conference of the National Association of Schools of Public Administration and Affairs*. Denver, CO.

Shields, P. M. 1996b. "Pragmatism: Public Administration's Policy Imprint." *Administration and Society* 28: 390-411.

Wamsley, G. L. 1996. "A Public Philosophy and Ontological Disclosure as the Basis for Normatively Grounded Theorizing in Public Administration." In *Refounding Democratic Public Administration*, edited by G.L. Wamsley, and R. Wolf. Thousand Oaks, CA: Sage.

Wiener, P., Ed. 1958. *Charles Sanders Peirce: Selected Writings*. New York: Dover Publications.