Lecture 3:
History, Prospects and Problems of the Scientist-Practitioner Model in Psychology

I. INTRODUCTION
A. Images of Scientists & Practitioners

- Psychologists who are both scientists and practitioners are difficult to imagine
  - Practitioners focus on applying ideas in order to heal or help people.
  - Scientists are focused on testing ideas in order to prove them right or wrong.
- These two goals seem antagonistic.
  - But in medicine, medical doctors who treat people are also biomedical scientists.
  - These clinician-scientists flourish in medicine and have a storied history

I. INTRODUCTION
B. Clinician-scientists in Medicine

- Clinician-scientists has been made important contributions to all aspects of medicine.
- For example there are famous clinician-scientists in surgery, psychiatry, and neurology
  - Psychiatry: Leo Kanner, a child psychiatrist, introduced the label *early infantile autism* in 1943.
  - Surgery: Michael E. DeBakey, a surgeon, performed the first multiple organ harvest and transplant.
  - Neurology: Carl Wernicke, a physician, identified an brain area, damage to which causes a form of aphasia now known as Wernicke's aphasia.

I. INTRODUCTION
C. Status of Physician-Scientists.

- Today, there are three types of clinicians who have links to the world of academic medicine.
  - *Academic clinicians* are at the forefront of clinical practice and focus on implementation of knowledge into practice (need not do research).
  - *Clinician researchers* are strongly linked to practice, while at the same time maintaining research programs, often as part of an interdisciplinary team.
  - *Clinician scientists* are full-time scientists who are clinically trained. They do a small amount of clinical work, but work across the range of basic science.

I. INTRODUCTION
C. Status of Physician-Scientists.

- But not all is well for physician-scientists in medicine
  - Fewer people pursue a career that combines bio-medical research with some clinical activities.
    - Of those who complete training, less than 10% pursue careers in clinical research, opting for pure research.
  - Barriers to clinician scientists in medicine include
    1. problems with the training opportunities.
    2. lack of identified career paths.
    3. lack of senior mentors.
    4. lack research infrastructure for primary care.
    5. lack of funding for development of clinician scientists.

II THE SCIENCE OF CLINICAL PRACTICE
A. History of Clinical Psychology in the US

- In 18th C America, mental illness was seen as an acute illness, curable if therapy was early.
  - The first mental asylum in the US was open in 1750s in Philadelphia.
    - Practiced *moral therapy* which involved individually tailored activities.
    - By mid 1950s, asylums (now state hospitals) were disbanded as they had became warehouses of failed patient management.
  - Research to promote therapy and diagnosis in asylums began in the late 1880s.
    - Mental testing in asylums and out becomes popularized by J. M. Cattell & R. Jastrow.

II THE SCIENCE OF CLINICAL PRACTICE
A. History of Clinical Psychology in the US

- 20th C marks beginning of clinical psychology.
  - *Clinical Psychology* coined in 1907 by Witner who also edited journal *Psychology Clinic*.
    - Mental testing, specifically intelligence testing, by psychologists becomes widespread during WWI.
  - Freud and Jung visited Clark University in 1909 and gave lectures about Psychoanalysis.
    - MDs believed that psychotherapy should be practiced exclusively by doctors.
  - Social movements brought attention to mental health issues (National Committee for Mental Hygiene).

II THE SCIENCE OF CLINICAL PRACTICE
A. History of Clinical Psychology in the US

- Clinical Psychology became part of the APA (American Psychology Association) in 1919
  - APA Founded in 1892 as a society to promote the science of psychology.
    - Clinicians were unwelcomed and later withdrew for a period of time, creating their own association.
  - It is not until 1944 that APA fully embraced clinical psychology, becoming responsible for clinicians' credentialing and training requirements
    - To reconcile with clinicians, APA changed its stated purpose to include psychology as a *profession and a means of promoting human welfare*.

II THE SCIENCE OF CLINICAL PRACTICE
B. APA Statement on Training (1947)

- APA seriously but carefully addressed its new responsibility for credentialing and training clinical psychologists
  - David Shakow chaired an APA committee to create the curriculum.
  - The committee completed a report in 1947 which contained a set of undergraduate and graduate curriculum recommendations for clinicians.
  - The 1947 statement made clear that clinical psychology is "*both a science and an art calling for scientific rigor tempered by personal and social sensitivity*."

II THE SCIENCE OF CLINICAL PRACTICE
C. The Boulder Model

- But university Psychology Departments were reluctant of have APA control their curricula.
  - Harvard, Columbia, and others still have Clinical Programs in their School of Education (Ed.D vs. Ph.D.)!!
- A 1949 meeting was held in Boulder Colorado to implement the new curriculum.
  - Shakow and 73 others representing universities and other disciplines hammered out a set of specific proposals for the training and practice of clinical psychology.
  - The resulting view of psychological practice was the Boulder (or Scientist-Practitioner) Model.

II THE SCIENCE OF CLINICAL PRACTICE
C. The Boulder Model

- The agreed upon Boulder Model was designed to insure that clinical psychologists…
  - use scientific methodology in their practice
  - work with clients using scientifically valid methods, tools, and techniques
  - inform their clients of scientifically-based findings and approaches to their problems;
  - conduct practice-based research.

III A House Divided
A. Pure and Applied Psychology

- There remains a split between psychologists oriented to clinical vs. scientific aspects of the discipline in the APA.

APA continued to evolve into an organization in which clinically-applied members began to out-number research-oriented ones.

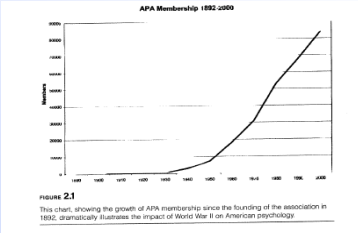

FIGURE 2.1
This chart, showing the growth of APA membership since the founding of the association in 1892, dramatically illustrates the impact of World War II on American psychology.

III A House Divided
A. Pure and Applied Psychology

- In the past, it was the clinicians in APA who were unhappy, more recently its the scientists.
  - In 1960, a group of scientific psychologists left the APA and formed their own organization
    - The Psychonomic Society
  - In 1989 another group of psychological scientists organized the APS (American Psychological Society)
    - APS is now called the Association for Psychological Science.
- There are a number of reasons for this house divided.

III A House Divided
B. Clinicians vs. Scientists

- Temperament differences between clinically- and scientifically-oriented psychologists .
- James (1907) divided philosophers into:
  - **Tender-minded** (Principled, Intellectualistic, Idealistic, Optimistic, Religious, Free-will, Dogmatic) temperament
    - characterizes members of the humanities (Snow, 1984)
  - **Tough-minded** (Fact-based, Sensationalistic, Materialistic, Pessimistic, Irreligious, Fatalistic, Skeptical) temperament
    - characterizes scientists (Snow, 1984)
  - Because of the differences, communication between the two groups is challenging.

III A House Divided
B. Clinicians vs. Scientists

- Other differences between those who engage in pure and applied psychology.
  - Kimble (1984) found that experimental psychologists tend to be tough-minded and humanistic psychologists and psychotherapists tend to be tender-minded.
- Dawes, Faust, & Meehl (1989) identified different ways clinicians and scientists make judgments and decisions.
  - Consider how you would prefer to be evaluated for a grade in the course:
    - Subjective judgments of the professor.
    - Objective evaluation of course performance (tests, etc.)

III A House Divided
B. Clinicians vs. Scientists

- Dawes et al., (1989) characterized the difference in terms of the methods of each to make judgments and decisions.
  - **Clinical judgments** are performed in one's head often using "intuitive knowledge", "clinical impressions", or "subjective reactions"
  - **Actuarial or Statistical judgments** rest solely on empirical relations between data and the condition or event. No intuitions, impressions or reactions; just using data to make judgments.

III A House Divided
B. Clinicians vs. Scientists

- Differences found between the methods
  - Goldberg (1972) found that 62% of clinical judgments were correct whereas 70% of actuarial judgment were correct when making distinctions between psychosis vs. neurosis.
    - Even training the clinicians in actuarial rules did not improve their performance.
    - Clinicians' were unreliable in their patterns of judgments.
  - Leli & Filskov (1970) studied the diagnosis of brain dysfunction based on intellectual testing.
    - The statistical judgments were correct om 83% of new cases but clinicians were correct in 63% (experienced) and 58% (inexperienced) of the new cases,

III A House Divided
B. Clinicians vs. Scientists

- Dawes et al. (1989) cite over 100 studies comparing clinical and actuarial judgments in the social sciences.
  - In each study, the actuarial method is equaled tp or surpassed the clinical method, sometimes substantially
    - The methods tied in Watley &Vance's (1974) study of the prediction of college grades.
    - The actuarial method showed a slight to modest advantage in Carroll et al.'s (1982) study on the prediction of parole violation.
    - The actuarial method was correct almost twice as often than the clinical method in Wittman's (1941) study on the prediction of responses to electroshock therapy.

III A House Divided
B. Clinicians vs. Scientists

- There are advantages to clinical judgments when such judgments rest on a well tested and valid theory, not intuition.
  - If a clinician holds a valid theory of all the causal forces operating in a situation, their predictions may be superior to simple actuarial judgments.
- But, the typical theory that underlies prediction in the social sciences (unlike the biomedical sciences), satisfies none of the needed conditions.
  - A well tested and valid causal theory about abnormal behavior is largely unavailable.

III A House Divided
B. Clinicians vs. Scientists

- Why clinical judgments are worse than actuarial ones?
  - Actuarial procedures, unlike clinical ones, always lead to the same conclusion for a given data set.
    - Factors as fatigue, recent experience, or seemingly minor changes in the ordering of information or in the conceptualization of the case or task can produce fluctuations in judgment.
  - Actuarial methods ensure that variables contribute to conclusions based on their actual predictive power and relation to the criterion of interest.
    - Actuarial decision rules eliminate the non-predictive variables, and weight predictive ones in accordance with their independent contribution to accurate conclusions.

III A House Divided
B. Clinicians vs. Scientists

- Why clinical are worse than actuarial judgments
  - Clinicians often obtain little or no information about the accuracy of judgments.
    - Clinicians often can not find out whether they are "right" and outcomes are easily distorted (Rosenhan, 1972)
  - On this note, clinical judgments produce "self-fulfilling prophecies."
    - Prediction of an outcome often leads to decisions that influence or bias that outcome.
  - Clinicians are exposed to skewed samples making it hard to accurately know relations among variables.
    - Co-occurrence of certain features (EEG abnormalities) in a skewed sample (only juvenile delinquents) does not make the feature a predictive of that sample.

III A House Divided
B. Clinicians vs. Scientists

- Clinicians are over-confident about their clinical judgment.
  - Research shows that clinical judgments are made with more confident than their accuracy warrants (Dawes, 1998)
    - Faust et al., (1988) found that most clinicians were quite confident in their diagnosis although not one was correct.
- An anti-actuarial claim is that group statistics don't apply to single individuals or events.
  - Although individuals and events may exhibit unique features, they typically share common features with other persons or events that permit predictive power.
    - By this logic, one would be willing to play Russian roulette with a gun having a single vs. multiple bullets.

III A House Divided
C. Problems with the Boulder Model

- A house divided has two sides
  - One the one hand, scientists believe that clinicians tend towards being tender-minded thinking and anti-actuarial (non-scientific) judgments .
  - On the other, some clinicians have some not-so-kind thoughts about the value of the scientific training in the Boulder Model.
- These clinicians argue that same person should not be trained in applied & pure work.
  - There is no valid reason for clinicians to train in pure science.
  - Talent and interest in applied work is incompatible with talent and interest in scientific work.

III A House Divided
C. Problems with the Boulder Model

- Frank (1984) summarizes the evidence.
  - Many good clinicians fail to complete the required research (Ph.D. dissertation) in graduate school so do not become clinicians (ABD).
    - The relation between being a good clinician is not related to completing required research for a Ph.D.
    - Most clinical psychologists know of other students in graduate school who did not finish their Ph.D. because they could not complete the dissertation
  - Research skills of clinicians may be unnecessary because only a few clinical psychologists ever publish after graduate school.
- The scientist-practitioner model does not produce many scientist-practitioners!!

III A House Divided

C. Problems with the Boulder Model

- The scientist-practitioner model may be the problem!
  - There is no evidence that handful of research courses in graduate school are sufficient to develop competent scientists.
  - Clinical- and science-oriented professors in Boulder Model schools do not value clinically oriented research (the topic of interest to clinical students).
    - The scientists think that the research lacks sufficient controls .
    - The clinicians think that controls that are exerted makes the research invalid.
  - Not many scientist-practitioners in the profession.

III A House Divided

C. Problems with the Boulder Model

- Clinicians do not dismiss science!
  - Everyone agrees that clinical psychology need a solid background in the basic science.
    - Such background is trained in undergraduate and graduate psychology courses (Methods and Statistics)
  - However, the question is whether clinicians should conduct their own research as required by the schools employing the Boulder Model.
- They distinguish between those who want to find generalities about *all* people (scientists) and those who want to help *a* person (humanist).
  - Like tender and tough-minded temperaments!

III A House Divided

C. Problems with the Boulder Model

- Frank (1984) identifies a range of differences between scientists and clinicians
  - Personality
  - Cognitive Style
  - Childhood Experience
  - Cerebral Dominance
- Frank (1984) concludes that political forces (not sound reasons) was the cause of adding a research requirement to the Boulder Model.
  - The rift between applied and pure research orientations in the history of psychology remains unresolved despite the research requirement in the Boulder Model.

III THE VAIL MODEL

A. The Vail (Scholar-Practitioner) Model

- The clinicians have since reacted to the Boulder Model
  - Instead of a science-practitioner model, an alternative scholar-practitioner model of clinical training was proposed.
  - The model proposed training applied clinicians without the research requirement.
- The model was first instituted at the University of Illinois in 1968
  - The tents of the new model were ratified at a meeting in Vail Colorado in 1973,
    - The Vail Model promoted a professional program along the lines of those in medicine, dentistry, and law, accounting etc

III THE VAIL MODEL
A. The Vail (Scholar-Practitioner) Model

- Several features differentiate the Vail from Boulder models:
  - Vail-based programs usually grant only a Psy.D. degree not a Ph.D. or Ed.D.
  - Training is more strongly focused on clinical practice in Psy.D. than in a Ph.D. or Ed.D.
  - Admissions criteria may place more of an emphasis on personal qualities and clinically-related work experience.
  - These programs are housed in a greater variety of institutional settings than are research scientist or scientist-practitioner programs.

III THE VAIL MODEL
A. The Psy.D. vs. Ph.D.

- Students interested in psychology are left to decide between two types of programs.
  - The different programs designate the scientist role (Ph.D. or Ed.D.) from the practitioner role (Psy.D.).
    - Acceptance rate for students are higher in Psy.D. (40%) than Ph.D./Ed.D. (13%) programs.
    - Psy.D. offers less financial assistance than Ph.D./Ed.D. programs and students graduate with more debt.
    - Students in Ph.D./Ed.D. programs graduate later than students in Psy.D. programs.
    - Psy.D. graduates do not perform as well as Ph.D./Ed.D .graduates on the Examination for Professional Practice in Psychology (EPPP).