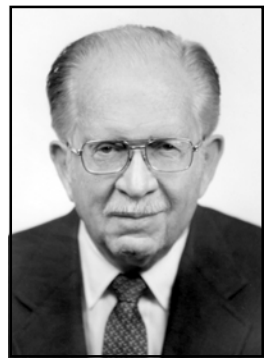

"A theory dealing with the practice of pharmacy . . . could be useful in directing the course of our future."

Donald C. Brodie

(1980)

At the time he received this award, Donald C. Brodie was Professor Emeritus of the University of California and Adjunct Professor of Medicine and Pharmacy at the University of Southern California, Los Angeles.

Need for a Theoretical Base for Pharmacy Practice

We are gathered this evening to pay tribute to the memory of Harvey A. K. Whitney. Some of us here knew Harvey Whitney when he was chief pharmacist at the University of Michigan Hospital and can match the name with the man; some of us know only the name. In either case, we come together each year with a resolve to perpetuate his memory by creating an environment of admiration, respect, and reverence for a hospital pharmacist of many talents.

Harvey Whitney was a man who could motivate and stimulate people; during the course of his career, he developed a cadre of disciples who carried his philosophies and goals for hospital pharmacy practice wherever they went. Some of these are with us this evening. Harvey Whitney had a keen sense that permitted him to detect defi-

ciencies in the pharmacy curriculum of his day in light of the needs of students who would practice in hospitals. Harvey Whitney was the founder of the American Society of Hospital Pharmacists; he was its first president. Harvey Whitney was a man who made things happen; he inspired people; he shaped reality, both conceptually and physically. His career was a living example of the admonition:

Don't go where the path leads, rather go where there is no path and leave a trail.

We revere and honor his memory this night.

I have entitled my address "Need for a Theoretical Base for Pharmacy Practice." Actually, I had hoped to include some comments on pharmaceutical education with particular reference to the needs of hospital pharmacy and a few thoughts for the future, but the constraints of time made that totally impractical. I concluded that for this occasion the idea of a theoretical base was the most appropriate of the three ideas, and I am leaving the other two to some future time.

We have passed over the threshold into the 1980s. The only certainty of today is the uncertainty of tomorrow. Our nation probably has never entered a decade with more formidable issues to be solved than those that lie ahead in the 1980s. One of the issues of particular concern is the entire spectrum of problems involving health: changing roles of health professionals, the cost of health care and cost containment, health manpower and the use of support personnel, the role of government in health care delivery, the impact of computers and high technology, and the numerous problems in bioethics resulting from recombinant DNA research.

For the profession of pharmacy as a whole, the central issue will continue to be the acceptance of the fact and reality of change and the determination to take an active role in shaping that change. The alternatives seem obvious: pharmacy either accepts what the future brings or works to shape the future in accordance with what pharmacists want that future to be. One of the difficult problems will be the identification of changes before and as they occur and the development of strategies to deal with them. One strategy that is available to us is the development of a theoretical base for pharmacy practice. To my knowledge, pharmacists have never been challenged by the idea that there might be a theory (or a family of theories) dealing with the practice of pharmacy and that such theory or theories could be useful in directing the course of our future.

I am defining "theoretical base" to mean an intellectual framework designed to serve the purposes and needs of future planning for pharmacy. The framework or structure is based on empirical information that is consistent with data available to support it either in the literature or elsewhere. You will sense from this definition that we are dealing with a structure composed of concepts and other sets of abstract ideas that, when brought together, form an ideal state. In fact, Dickoff and James,[1] in their definition of "theory," emphasize the abstract nature of theory:

. . . a conceptual system or framework invented to some purpose; and as the purpose varies so too must vary the structure and complexity of the system.

What a worthy objective for the profession were it to begin building a theoretical base for pharmacy practice during the decade of the eighties. Such an effort will not lead to a neatly bound compendium entitled "A Theory of Pharmacy Practice." Rather, it will be in the form of a series of ideas, statements, hypotheses, and other forms of abstraction. When statements about pharmacists and pharmacy can be interrelated and describe a causal process (relationship), they can be studied, documented, and tested. If empirical data can be derived from causal processes and combined with existing data, they can be presented to members of the pharmacy profession for study, modification, and adoption. Where existing data are not adequate, research will be necessary to provide the documentation. What we are striving for is to develop a conceptual base in the form of ideas, constructs, and statements which describes, clarifies, and strengthens the societal position of pharmacy and its practitioners. It is part of the scientific body of knowledge about pharmacy developed by pharmacists in keeping with the purposes of pharmacy. In his introductory statement to his *Primer in Theory Construction*, Professor Paul Reynolds[2] states:

A scientific body of knowledge consists of those concepts and statements that scientists consider useful for achieving the purposes of science.

As our statements and concepts lead to tangible evidence that documents the purpose and needs of pharmacy, they begin to shape the framework which ultimately will encompass the theoretical base of pharmacy practice.

The construction of models of professional behavior is a useful step in the development of a theoretical base for pharmacy practice. Models, representations of reality or some hypothetical state of reality, are designed to provide clarity, understanding, and guidance. Models have been useful in studying social systems, such as systems of evaluation or patterns of human behavior. They can be constructed to represent new or modified roles for health professionals as a means of examining their proposed utility and general acceptance. A model for pharmacists, for example, would emphasize those contributions unique to pharmacists because of their education and training, such as monitoring drug therapy, applying pharmacokinetic principles to the design and adjustment of dose regimens, providing drug information to physicians and patients, and maintaining individual patient records of drug usage. It would include activities being developed by selected pharmacists in the care of certain classes of patients (oncology) in hospitals and ambulant patients in the out-of-hospital setting and the reciprocal relationships between physicians and pharmacists designed to improve the level of patient care. The model would include those activities that are at variance with traditional pharmacist functions, such as the prescribing of drugs as currently being done legally on an experimental basis in California.[3]

In each instance, the uniqueness of the pharmacist's contribution to society would be emphasized as well as the desire and confidence pharmacists have in serving societal needs. Obviously, such a model would represent an alternative to pharmacists' traditional behavior and, if it were constructed, could be studied to determine its acceptability by present-day pharmacists, the public, and other health professionals.

The degree of acceptability would provide justification and guidance to the profession for developing the modified role specified in the model. Similarly, it would guide the schools of pharmacy in adjusting the pharmacy curriculum in keeping with the new role.

If pharmacists were to begin construction of a theoretical base, they would find a useful guideline in the generally accepted pattern of professional behavior usually referred to as the paradigm for the professions. The literary form in which the paradigm is presented will vary from scholar to scholar, but there is general agreement in terms of behavioral characteristics. I have chosen a model adapted from one presented by Argyris and Schon in their text, *Theory in Practice: Increasing Professional Effectiveness*:[4]

1. *An ideology—based on the original faith professed by a profession.*
2. *An ethic—that is binding on the practitioners of a profession.*
3. *A body of knowledge—unique to a given profession.*
4. *A set of skills—which, when combined, form the technique of a profession.*
5. *A guild—of those entitled to practice a profession—the brotherhood.*
6. *Authority—granted by society as a form of professional respect and licensure or certification.*
7. *An institutional setting—where a profession is practiced in a standardized environment such as a hospital, courtroom, pharmacy, and church.*
8. *A theory—based on the societal benefits derived from the faith professed—the ideology.*

Historically, the prototypical professional was the priest who practiced as a multiprofessional in an undifferentiated way, serving as minister, judge, healer, and teacher. In time, the professions of theology, law, medicine, and education were differentiated from the priesthood as secular institutions. The process of differentiation has been replicated many times in history with the growth of knowledge and skill where today we recognize some 200 professions, more than 50 of which are in the health field. Pharmacy was differentiated from medicine in the late Middle Ages and stands today as one of the autonomous health professions with a very specific mission in society.[5] That mission, however, has suffered from the lack of definition over the past 50 years as the responsibility for making medicines has passed to the pharmaceutical industry. Some questions have been raised by social scientists and others regarding the professional status of pharmacy because of the passive attitudes and behavior of many pharmacists, the environment in which much pharmacy is practiced, and the apparent belief that the boundaries of the pharmacist's social responsibility are circumscribed by the act of pharmaceutical dispensing. These matters should be of concern to us as we begin to think of a theoretical base for pharmacy practice.

Because the professions have their roots in religion, Palmer[6] was prompted to say:

A professional, as I understand it, is supposed to profess, to testify, to bear witness to some sort of faith or confidence or point of view. Traditionally, at least, it was only because he did so that he merited being called "professional."

Thus, medicine professed health, law professed justice, education professed truth, and the ministry professed salvation. And pharmacy—what did pharmacy profess? We have difficulty with this question in today's world. We do not have a clear picture of nor do we communicate with conviction that which we profess. As a result, the transformation of what we profess into a professional ideology seems distorted or in some way is incomplete. A question that has nagged me for years deals with the idea that at one time pharmacists did make a strong testimony of commitment to society that ultimately was transformed into an ideology for the profession. In the mid sixties, I was searching for an answer by identifying a mainstream function for medicine, law, theology, and other professions; I could not identify one for pharmacy. In the report of the Commission on Pharmaceutical Services to Ambulant Patients by Hospitals and Related Facilities,[7] I wrote:

Does pharmacy practice have, in a historic sense, a mainstream component as have other professions? Has it had one only to lose it to time, science, technology, and social change? Has it had one only to lose it to professional neglect, such as overindulgence in nonprofessional activities, or, perhaps, an attempt to serve the public on a part-time basis? Has it had one that in time has become so ill-defined in its outline that both practitioner and layman alike have difficulty in identifying the distinguishing marks?

I am forced to acknowledge that the faith pharmacists professed in my time has not led to a strong professional ideology that generates confidence in the values that are inherent in the services pharmacists provide. That ideology must be strengthened and restored for the 21st century envisioned by Alvin Toffler[8] and other futurists. No doubt, some of the historic ideology has eroded with the industrialization of pharmacy, which stripped the practitioner of many creative functions unique to him.

Without a clear ideological component in the professional paradigm, the task of constructing a theoretical base for pharmacy practice is made difficult. The ideology, fully developed, envisions a better world because of the availability of drugs and drug-related services delivered by pharmacists who are educated and trained to fulfill these societal needs.[9] Because of the availability of these services, society is the beneficiary; without them, the welfare of society is in jeopardy. As we think about our professional ideology and plan construction of a theoretical base for professional practice, there is yet another component that lacks clear definition in the minds of most people, including pharmacists. That component is an identified and articulated professional purpose. During my search for identity of a mainstream function for pharmacy, I proposed that drug-use control was that function:

. . . the sum total of knowledge, understanding, judgments, procedures, skills, controls, and ethics that assures optimal safety in the distribution and use of medication.

This concept gave us light at the end of what seemed, at the time, to be a badly obscured tunnel. Richard Penna[10] commented recently that this concept provided a ray of hope to "younger pharmacists" and "identified what pharmacists should be doing in serving the health needs of the American public." Is the concept of drug-use control our professional purpose? What is the object for which pharmacy exists? Is that object essential for the welfare of society or is it a convenience? I believe there is general agreement among pharmacists that their role in society is the delivery of the drug component of health care, but just what the limits of that role are is a question for which there is as yet no universal agreement. The answer, in my opinion, will direct the future course of pharmacy in our time. If that role expands as a result of progressive and responsible behavior, the slope of the curve of professionalism will be positive; if pharmacists choose to retain their traditional behavior, the slope almost surely will regress.

Pharmacists' behavior has changed perceptibly since World War II, undergoing the greatest change in the 1960s with the emergence of an expanded clinical role. If one lists the services pharmacists are providing today, he would find that they could be arranged in one of three categories:

1. Services mandated by law, rule, or regulation.
2. Discretionary services provided by a majority of pharmacists.
3. Discretionary services provided by a small minority of pharmacists.

He would find that there would not be a consensus among pharmacists that they should provide all the listed discretionary services. Even if the list were submitted to hospital pharmacists on the one hand and community practitioners on the other, still there would not be agreement among those in either group. But if the profession seeks guidance in the development of an expanded clinical role for its practitioners, it must rely particularly on its acceptability by pharmacists in addition to that by the public and other health professionals. This leads to a researchable question: What is the degree of consensus among pharmacists, consumers, and other health care providers on the acceptability of an expanded role for pharmacists, including the clinical services assumed in the current model?

The following[a] or some such list of pharmacists' services can be used to determine the degree of consensus. Whatever list is used, it should contain those clinical services already provided by pharmacists (to assess the minimal level of consensus) and a brief description of each service (to aid respondents). These services, incorporated into a scientifically designed and tested questionnaire, can be submitted to an agreed upon population of pharmacists, consumers, and physicians in order to answer two questions: Should the service be provided by any health professional? Should pharmacists provide the service?

1. Compounds and dispenses prescriptions.
2. Assumes custodial care and responsibility for the distribution of controlled substances.
3. Explains the directions for use of prescription medicines at the time of delivery of prescriptions to ambulant patients.
4. Delivers package inserts (PPIs) to patients at the time of delivery of estrogens and progestational agents.
5. Establishes and monitors a system to insure proper storage for perishable pharmacy items such as insulin and other biological products.
6. Selects the manufacturing source of drug products to be purchased under generic names.
7. Maintains prescription profile records for ambulant patients.
8. Refers to prescription profile records prior to dispensing refill prescriptions.
9. Obtains a drug history on selected inpatients and ambulant patients.
10. Conducts drug-use studies at periodic intervals using computer printouts and other sources of data.
11. Develops guidelines for the use of antibiotics.
12. Applies pharmacokinetic principles in determining or modifying the dose of selected drugs.
13. Provides patient counseling on an individual basis or through some form of mass media.
14. Provides formal and informal consultations with physicians regarding patient drug therapy problems.
15. Applies selected physical assessment techniques in evaluating patient responses to drug therapy.
16. Provides supplies and appropriate counseling services in the use of ostomy appliances and other surgical and sickroom supplies.
17. Provides emergency services such as poison information, cardiovascular pulmonary resuscitation, and counseling regarding the appropriate use of drugs in emergent situations.
18. Reviews periodically the use of drugs in nursing homes in accordance with professional and legal standards.
19. Participates in home health care programs with public health nurses.
20. Interprets drug levels for selected drugs in order to obtain optimal benefit in drug therapy.

Assuming that a scientifically valid study is conducted and the results showed a consensus ranging from 55 to 70% in support of pharmacists assuming an expanded role, what significance might these results have? They surely would lend support, confidence, and direction to the profession in its efforts to improve the utility of its practitioners. On the other hand, if one or both of the nonpharmacist groups believed that pharmacists should not provide the services, it would lead to an understanding of reality and simultaneously provide guidance in developing long-range strategy to shape that reality. But, in addition, such a study would contribute to the development of a theory for pharmacy practice. I have used this example because it illustrates how the profession of pharmacy can relate "theory development" to planning for the future. It places future planning in a broader frame of reference than we are accustomed to using.

The worth of pharmacy to society is judged by the actions and services of its practitioners. These actions justify or deny its recognition and acceptance as a profession. Pharmacists provide action; they are doers; they, as other professionals, define their scope of social concern through a more or less standardized pattern of professional behavior. They create, construct, and maintain reality. But the true professional does more than create, construct, and maintain the status quo. He shapes and changes reality and has before him those purposes that have been "invented" or "created" by and for his profession. Dickoff and James[1] summarize professional purpose as follows:

. . . a professional cannot just watch, cannot just do, and cannot just hope or dream. . . . A theory for a profession or practice discipline must provide for more than mere understanding or "describing" or even predicting reality and must provide a conceptualization specially intended to guide the shaping of reality to that profession's professional purpose.

You in my audience tonight—pharmacists, scientists, and researchers—have the ability and the capacity to shape and change that reality; I challenge you to commit yourselves to such a goal because you have the vision and discipline to do so. But a theoretical base for pharmacy practice cannot be perceived according to traditional views of the world as we know it today. Our professional purpose and ideology must be perceived and articulated in view of that world we believe lies ahead. No one knows precisely the dimensions of that world, but futurists are beginning to give us a glimpse of some of its characteristics. Alvin Toffler[8] says:

Today, four clusters of related industries are poised for major growth and are likely to become the backbone industries of the Third Wave era, bringing with them, once more, major shifts in economic power and in social and political alignments.

Those industries—electronics and computers, space exploration, ocean exploration, and genetic engineering—all will have an impact on the future practice of pharmacy.

Futurist Robert Theobald[11] said in 1978:

We should recognize that we must move away from our industrial/mobile society toward a

communication/community society. This shift will require modification in our social patterns which will be at least as great as those which occurred between the agricultural era and industrial era but they will take place far more rapidly. One of the most worrying aspects of the present period is the failure to understand the speed and scope of the microelectronic revolution which will change so much of our lives in the next decade.

Mr. Theobald's last sentence reminds us that the "future is now."[12] I am going into that future with hope and optimism notwithstanding the negative signs that surround us. I believe that you as hospital pharmacists and the Society which directs your professional destinies can share in my confidence. The experience, the successes, and the failures of the past justify our approach to the future, with the anticipation that the problems we find there will be solvable and that we can solve them. And that being so justifies our hope and confidence for continued growth.

(For the complete list of references cited, please see pages 53–54 of the *American Journal of Hospital Pharmacy*, Jan. 1981.)

Harvey A. K. Whitney Award Lectures (1950–2005)

www.ashpfoundation.org