Partition of Occupational Science and Occupational Therapy: Sorting Out Some Issues

The Issue Is

The paper "Partition of Occupational Science and Occupational Therapy" suggested that a complete separation of the discipline of occupational science and the profession of occupational therapy would be of considerable benefit to both groups (Mosey, 1992b). Reasons why partition would be beneficial and suggestions for bringing about and maintaining complete partition were offered. Clark et al. (1993), responding to these suggestions in "Dangers Inherent in the Partition of Occupational Therapy and Occupational Science," raised a number of issues related to partition. However, contrary to the promise of the title, no specific inherent dangers were described.

Regarding the well-being of occupational therapy, one danger of partition was mentioned—the possibility of an inadequate theoretical base for practice. However, there was no explanation of how such a situation might come about, or any argument presented to support the probable occurrence of such an eventuality. This issue will be discussed further below.

As to the well-being of occupational science, no anticipated dangers related to partition were identified. It is apparent, however, that Clark et al. believe occupational therapy's resources should continue to be used to support occupational science. Reasons cited are precedents and anticipated contribution to the body of theoretical information that supports the practice of occupational therapy. Nevertheless, nothing was said about any possible harm to occupational science as the result of partition.

Thus, it appears that Clark et al. see no real dangers in the partition of occupational science and occupational therapy, no threat to the welfare of either group. Although other voices need to be heard, there seem to be fewer impediments to partition than might be anticipated.

As mentioned, Clark et al. did raise a number of issues related to partition. What follows is a brief discussion of some of these issues with the intent of clarifying, and thus, it is hoped, facilitating partition. Five issues will be addressed.

1. the possibility of inadequate theoretical information for occupational therapy practice
2. the relative worth of basic scientific inquiry versus applied scientific inquiry
3. the reputed continuous and undichotomous relationship between basic and applied scientific inquiry
4. the described mission of occupational science
5. the scientific inquiry priorities of occupational therapy

The Possibility of Inadequate Theoretical Information for Occupational Therapy Practice

Clark et al. raised the possibility that partition of occupational science and occupational therapy could lead to an inadequate theoretical base for the profession's practice. How this situation may come about is not clear. Nevertheless, according to history, the availability of suitable theoretical information for use by the profession does not seem to be in jeopardy.

For the past several decades, occupational therapy has drawn on theoretical information generated by a variety of disciplines. The profession has sought, found, and used previously unexamined, new, and emerging theoretical information as the foundation for developing frames of reference addressing the various elements contained within the profession's domain of concern. In so doing, new theoretical information has been continually added to its fund of such knowledge, and innovative frames of reference developed. All of this has been accomplished through applied scientific inquiry—although many involved may not have known they were engaging in this form of inquiry. As the generation of suitable theoretical information by the various disciplines is likely to continue, a possible deficit in the fund of information available to support practice need not be a concern.

The Relative Worth of Basic Scientific Inquiry Versus Applied Scientific Inquiry

Two questions were raised about the relative worth of basic scientific inquiry versus applied scientific inquiry. The first was whether society is better served by one or by the other. This question has been discussed extensively by proponents of each form of inquiry and by those with no particular stake in either. When the issue of the inherent goodness of theoretical information is set aside, the conclusion seems to be that both are equally important. Only through applied scientific inquiry does the theoretical information generated...
by basic scientific inquiry directly benefit society. Without applied inquiry, theoretical information is useless to society (Mosley, 1992a).

In addition, there is much applied scientific inquiry, not related to theoretical information, that is considered to be of great worth. Such inquiry is concerned with answering specific, practical questions; typically questions related to quantity, quality, value, safety, effectiveness, and the like. Some examples of applied scientific inquiry with this focus are examination of the safety of consumer goods, the epidemiology of diseases, and the effectiveness of medications.

The development and use of penicillin, a technological product, is a good example of one relationship between basic and applied scientific inquiry, and illustrates why they are considered to be of equal worth. In 1927, Alexander Fleming, a bacteriologist, noted that a particular mold produced a substance, which he named penicillin, that killed some types of bacteria and did not damage white blood cells. This finding was published in an obscure journal and forgotten.

In 1940, on the eve of World War II, there was a desperate search for antibiotic substances. It was then that Howard Florey and Ernst Chain (among others) engaged in the applied scientific inquiry leading to the discovery of Fleming's work and to the development, first, of the technological guidelines fundamental to production of large quantities of penicillin and, second, the guidelines for practice that provided precepts for the effective use of penicillin. (To clarify, a couple of points mentioned by Clark et al.: Fleming's work was not supported by medicine; the profession knew nothing about it. He was not involved in any of the applied scientific inquiry associated with penicillin.) (Hellemans & Bunch, 1988)

The second question regarding worth was whether occupational therapy is better served by basic scientific inquiry or by applied scientific inquiry. No science-based profession (of which occupational therapy is one) can survive and thrive without engaging in applied scientific inquiry focused on developing theoretically based, safe, effective, and efficient sets of guidelines for action—these being sets of guidelines for practice, more specifically frames of reference, in occupational therapy. Basic and applied scientific inquiry are equally important to occupational therapy. This does not mean, however, that occupational therapy should do basic scientific inquiry.

To clarify, the above statements in no way imply that professions traditionally do, or should, engage in basic scientific inquiry, or use their resources to support basic scientific inquiry. Similarly, there is no implication that disciplines traditionally do, or should, engage in applied scientific inquiry, or use their resources to support applied scientific inquiry. This tradition evolved, and on the whole has been maintained, because disciplines and professions each have their own work to do. They can only do this work well by directing all of their attention and resources to it.

The Reputed Continuous and Nondichotomous Relationship Between Basic and Applied Scientific Inquiry

There are many and varied relationships between basic and applied scientific inquiry, some of them quite complex. However, of all the different relationships, none reflect Clark et al.'s statement that "the majority of authors emphasize that the basic versus applied distinction represents a continuum, and not an absolute dichotomy" (p. 185). This description is not supported in the literature. The relationship between basic and applied scientific inquiry is not continuous, and it is dichotomous.

Continuous and dichotomous are not opposites. Phenomena, for example, may be both continuous and dichotomous: The seasons of the year are continuous because they follow one another at regular intervals. Nevertheless, the seasons of the year are dichotomous: spring and summer cannot occur at the same time.

Some authors, not the majority, have described basic and applied scientific inquiry as being on a continuum. To the best of my knowledge, however, these authors have neither defined the concept of a continuum as it relates to the relationship between basic and applied scientific inquiry, nor have they described how basic and applied scientific inquiry can be envisioned as being on a continuum.

A continuum is the representation of a set of phenomena, or categories of phenomena, characterized as either:

1. Continuous—uninterrupted, or occurring at regular intervals in time (or space), or
2. Sharing a common property that is present in differing amounts in the phenomena of concern.

(Flexner & Hauck, 1987, s.v. continuum)

Basic and applied scientific inquiry cannot be represented as being continuous in time. Basic inquiry may or may not follow applied inquiry; applied inquiry may or may not follow basic inquiry. There is no regularly occurring pattern to the relationship between basic and applied scientific inquiry relative to time. Moreover, both self-sustaining basic and applied scientific inquiry often take place totally outside any conceivable possibility, or appropriateness, of applied inquiry, or of basic inquiry, respectively.

No property present in differing amounts that is common to basic and applied scientific inquiry has been identified by any author. In other words, no common property has been identified that is either: (a) present to a greatest to a lesser degree in basic inquiry and to an increasingly lesser to the least degree in applied inquiry (or the reverse) or (b) present to a greatest to least degree in basic inquiry, and to a least to greatest degree in applied inquiry with overlap in the area of lesser degree (or the reverse).

Phenomena are considered to be dichotomous if, when divided into parts, the parts becoming mutually exclusive—the occurrence of one precludes the occurrence of the other. The division of scientific inquiry into basic inquiry and applied inquiry results in a dichotomy because the goal, or end product, of each form of inquiry is mutually exclusive. The goal of basic scientific inquiry is to develop valid theories. The goal of applied scientific inquiry is bifurcate: to develop safe, effective, and efficient guidelines for action (technological guidelines or guidelines for prac-
tice), and to find the answers to specific, practical questions.

The reputed continuous-nondichotomous nature of basic and applied scientific inquiry is often cited in relationship to research projects. What is frequently implied in such a citation is that a given research project may have more than one distinct goal. In other words, a research project can be planned so as to contribute to both (a) developing a theory, and (b) either developing a set of guidelines for action or finding the answer to a specific, practical problem. Although such a plan may be possible, why would anyone want to do this?

When a research project is well conceived for one form of scientific inquiry, be it basic or applied, it is likely to be ill conceived for the other form of inquiry. All aspects of a research project are shaped by the ultimate purpose of the project—statement of the problem, review and description of the literature, use of research design, selection of participants, gathering of data, treatment of data, and interpretation of findings. With two goals in mind, there are apt to be so many compromises in the project plan that neither goal is well served. Instead of conducting basic or applied scientific inquiry, researchers will simply be gathering data for no clearly specified, long-term purpose.

When people are not sure about the difference between basic and applied scientific inquiry, or attempt to do both within the same study, they are usually concentrating their efforts on doing research projects, not on scientific inquiry. Research projects become central, rather than the process of engaging in purposeful, goal-directed scientific inquiry, be it basic or applied.

The Described Mission of Occupational Science

Throughout the article, Clark et al. seemed to describe occupational science as having a fairly limited mission, one closely allied to occupational therapy. At one point, for example, they stated that occupational scientists are to be those “sympathetic to the values and needs of the occupational therapy profession...their research on occupation will be more directly targeted towards practice consideration” (p. 185). This statement appears to be somewhat of a change in focus for occupational science, or if not a change, then not a great beginning for a discipline.

A discipline is not usually concerned with the practical problems of a profession. Disciplines are interested in describing the fundamental nature of phenomena within their sphere of inquiry, and ultimately in developing relatively inclusive, valid theories about that phenomena. One of the hallmarks of doing productive basic scientific inquiry is to go wherever inquiry leads, to follow a trail and the multiple branchings of that trail, to often walk a circuitous path. Any restriction on the paths that may be followed exhibits understanding of the phenomena in question, and of the larger aggregate of phenomena that constitutes the sphere of inquiry particular to the discipline.

For occupational science to always be concerned about whether its inquiry has fairly direct relevance to the practice of occupational therapy is likely to limit inquiry. Trails leading away from occupational therapy will not be followed; only part of the phenomena in the sphere of inquiry will be investigated. These limitations, in turn, are likely to put serious restraints on the possibility of developing valid theories.

It seems to me that occupational science once had a broader vision—a boldness of purpose that went far beyond occupational therapy, a willingness to walk into the jungle of unexamined phenomena. If occupational science is to follow the dictates of the above quotation, so be it. However, in so doing, it is not likely to be accepted as a peer by the established disciplines.

Actually, the broad vision and boldness of purpose seemed better. It sounded like a high risk venture, but then, why not? So much work went into defining occupational science and establishing a doctoral program—why not give it a serious try and fashion an independent disciple that could one day be recognized as a major contributor to society's understanding of the physical universe?

The Scientific Inquiry Priorities of Occupational Therapy

In the first paper (Mosey, 1992b), I suggested a planned, gradual withdrawal of occupational therapy's resources for support of occupational science. This suggestion was not meant to imply that occupational science would not provide theoretical information useful to the profession. One can only hope that it does. The suggestion was made to assist in development of occupational science, not to impede its growth. An analogy may be helpful: When a child is ready, parents judiciously withdraw degrees of support so as to encourage the child to turn outward toward, and ultimately become a participant in, the broader community. The community for occupational science is the recognized disciplines, not occupational therapy.

The suggestion of planned withdrawal of resources from occupational science was also made to assist in the development of occupational therapy. Ultimately, there would be more resources available for the applied scientific inquiry of occupational therapy—the proper form of inquiry for a science-based profession. More specifically, there are two reasons why occupational therapy should invest its resources in applied scientific inquiry. First, only occupational therapy can do, and is responsible for doing, the applied scientific inquiry necessary for its continued growth. Only occupational therapy can develop the frames of reference necessary to guide its practice.

Second, society is rightly demanding that health professions demonstrate the efficacy of their practice—the accuracy of their problem identification and the safety, effectiveness, and efficiency of their problem remediation. Occupational therapy can only fulfill these demands by engaging in applied scientific inquiry.

As Clark et al. indicated, one of the research priorities of occupational therapy is theory development, refinement and testing” (“Setting Priorities,” 1992, p. 19). It should also be noted that none of the priorities listed is related to development of frames of reference, to their refinement, or to assessment of their efficacy relative to different populations. The availability of funding to study the “effectiveness of occupational therapy services” is mentioned in the article (p. 19). It is not, however, stated as one of the research priorities. Moreover, it is mentioned in isolation, without reference to developing or refining services.

The absence of “frame of reference development, refinement, and assess-
ment of efficacy" as one of the research priorities of occupational therapy is disturbing. This is particularly so in light of the current Essentials and Guidelines for an Accredited Educational Program for the Occupational Therapist, which states, in the description of curriculum content, "The occupational therapy process shall be based on frames of reference" (American Occupational Therapy Association, 1991, p. 1081). It is odd to hold educators responsible for teaching students to use frames of reference as the foundation for practice, when the profession is totally unconcerned with developing, refining, and assessing the efficacy of frames of reference. It is definitely time for occupational therapy to reexamine its priorities relative to allocation of the profession's resources for scientific inquiry.

Conclusion

The original suggestion that there be a complete partition between occupational science and occupational therapy was not meant to emphasize discussion of allocation of resources for scientific inquiry. Rather, the suggestion was offered in the belief that partition would lead to greater clarity and specificity of focus in the education provided for those who are to be, and who are, members of each group, and in the scientific inquiry that each group does and will do. It was an attempt to describe what I believe will contribute to the continued development and well-being of each group.

Wherever reexamination of the use of occupational therapy's resources leads, it is hoped that the broader issues discussed in the first paper (Mosey, 1992b) will continue to receive attention. Moreover, it is hoped that this series of papers will lead to serious, in-depth study of applied scientific inquiry. A true "inherent danger" for occupational therapy is lack of a commitment to, inadequate understanding of, and skill in doing applied scientific inquiry.

References


