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ABSTRACT

A number of recommendations are set forth with the purpose of moving toward greater comparability of research results and more efficient accumulation of knowledge. These recommendations include more precise definitions of variables and samples, the inclusion of marker variables, and a review of the literature to plan alignment of new studies with old. Each of these recommendations is worthy of consideration and balanced implementation. Balanced implementation is the key, however. Excessive zeal in forcing any of these recommendations into regulations would seriously hinder the freedom of the researcher to explore and in the final analysis, be counter productive. (Author/RC)

DANGERS IN REQUIRED COMPARABILITY

A Paper Developed for the Symposium on Procedures and Problems for Increasing Cross-Research Analyses and Comparability

at

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Dangers in Required Comparability

The concept of "Comparability in Research" has been espoused by two Federal research coordinating organizations: The Interagency Panel for Early Childhood Research and Development and the Interagency Panel for Research and Development on Adolescence. These panels are made up of agencies from five departments represented by research administrators having responsibilities in the health and social sciences.

The mandate to the Panels for coordination and facilitation of research across the many agencies represented on the Panels led to discussions of how this could best be accomplished and what obstacles stood in the way. One obstacle immediately recognized was the lack of comparability of results among research studies in the same area, making it difficult for findings to be additive.

It is well understood that research produces contradictory results. But even when findings are in general agreement, often because of the lack of elements of comparability, generalizability is weak. In turn, this tends to elicit more research on the same question, which suggests a duplication of effort and expense which could have been avoided. The need for resolution on this issue was recognized by the researchers themselves in meetings with the Panels. As a result, a set of recommendations has been produced which has directed attention toward achieving greater comparability.

First, let us discuss what is meant by "comparability" and then list the proposed recommendations of how this objective may be accomplished. Comparability of research results, implies that the results may be compared or aligned. The intention is to form a better, more refined idea of the "truth. In an ideal situation, research findings, through mechanisms and procedures providing

comparability, should yield cummulative results across studies. The sum of knowledge in the field should be at least equal to the contributing research results, if not greater.

Meeting as members of the two interagency panels, representatives of some 25 agencies have worked on the problems of comparability and have come up with a number of recommendations. Some of these are at the implementation stage; while action with respect to others is dependent on the state of the research art in certain areas of inquiry. Briefly, these recommendations involve; (1) an emphasis for alignment in literature reviews; (2) more precise sample definitions; (3) more complete variable definitions; and (4) inclusion of marker variables/measures in the research design.

Although these recommendations and their implementation have already been discussed by other participants in this symposium, we would like to offer additional comment. While the concept of comparability is not an unreasonable one, it is quite possible that these recommendations become, in certain contexts, not only unreasonable, but dangerous to the future of creative research. It is possible to imagine an over-zealous accounting-accountability type within the Federal bureaucracy requiring each element of proceeding studies to be faithfully reproduced in new ones--thereby not only re-inventing the wheel, but making certain that the exact dimensions are retained. On a recommendation by recommendation basis, let us look at potentially dangerous implementations.

Literature Review

First, the review of the literature with special attention to the comparability aspects is a recommendation with which one cannot quarrel on a superficial basis. The review of the literature traditionally serves a number of functions such as providing a conceptual base for the hypothesis to be tested

or acquainting the researcher with the latest findings which might have a bearing on this anticipated research. One function it does not serve is indicating how anticipated research can be linked to the existing research in the area. Too often the conceptual base is there, but the means of linking the results are missing. As a result, the findings stand in isolation from those of other studies which preceeded. In fact, if taken seriously by the research community, this recommmendation could result in far fewer "iterative discoveries" wherein old findings are presented only clotherd in new terms. We believe that if serious thought is devoted to how anticipated and past research can be aligned, then research itself will be more productive and its impact all the more pronounced.

However, again--taken to extreme, the alignment and linkage function can be mistaken for a mandate for endless replication to the detriment of progress. The demands of comparability cannot overshadow the need for creativity and exploration of new areas by insistance on repetition of old mistakes.

Sample Description

A second recommendation is that samples be fully described to allow for cross-sample comparisons. This would allow for greater comparability of results, identification of possible sampling biases, etc. While worthy of support in principle, a number of constraints immediately arise, both economic and otherwise, not the least of which is the lack of journal space for presentation of extensive sample descriptions. However, we feel that the major problem is the cost in dollars and time of obtaining sample descriptor data. Beyond the readily apparent or easily obtained data, such as number in sample, sex, and age or grade, the dollar cost of obtaining data from records of schools, hospitals, or other institutions becomes a factor. Even more expensive is the cost in effort of both researcher and subject in obtaining data on psychological

or ecological conditions, to say nothing of the issues involved in protecting the privacy of the subject and his family. All of these constraints tend to militate against extensive efforts toward "precise" sample description.

Basic to this recommendation is the value and selection of the diverse data elements which together make possible an alignment of results via a "precise" definition. The point is this: What sample characteristics should be included? What is the trade off between the effort needed to obtain these data and their later contribution to comparability? These are some of the questions which need to be raised and resolved before this recommendation can be fully implemented. However, there should be a middle ground which offers a partial resolution of this problem. Perhaps a judicious selection of sample characteristics based on the literature will produce greater alignment potential. This selection could be especially useful in those situations where there may be conflicting results or where the generalizability of findings is limited.

Variable Definiton

The third recommendation is to include precise definitions of the variables under investigation and the instruments or methods used to measure them. Too often, the variables are described in global terms which renders it impossible to identify just what is being researched. In some cases defining variables precisely will be extremely difficult; in others it can be more easily accomplished. For example, the argument over what intelligence is, as well as how to measure it, still rages, along with the various factions. Developing an understanding of what constitites the elements of a particular variable is an exacting task at best, especiallly when the researcher models after the Alice in Wonderland character and proclaims that "this variable represents just exactly what I

intend it to represent." It gets even more confounded in these situations where multiple names are given to the same variable or multiple variables given the same name. This dilema leads to the dictum that the variable is what the instrument measures and therefore the test becomes the definition. In turn, more than anything else, this has been responsible for the request for marker variables and measures.

Marker Variables

The marker variable is intended to function as a "benchmark" to align research results. From one viewpoint, this is an extension of the sample description, or as an additional characteristic of the sample (with the attendant difficulties mentioned above). The selection of these marker variables is envisioned as the responsibility of the investigator who, presumably, is in the best position to know those most appropriate to the question under study. It is also assumed that this same vantage point should allow the appropriate marker measure to be selected. One further step is the developing of instrument lists from which the researcher could choose between those most widely known or most highly rated. However, this would come peri to mandatory inclusion of certain measures.

The problem is determining the appropriate point at which marker variables can contribute to wider knowledge without stifling creativity or needlessly dictating more for researchers to follow.

The marker variable approach is also limited by the state of the measurement technology. In some areas there are sufficient instruments of good technical quality but a dearth exists in others. But even where a good supply does exist, the question becomes which of the myriad of potential marker variables should be selected and on what criteria?

Summary

In summary, a number of recommendations have been set forth with the purpose of moving toward greater comparabiltiy of research results and more efficient accumulation of knowledge. These recommendations include more precise definitions of variables and samples, the inclusion of marker variables, and a review of the literature to plan alignment of new studies with old. Each of these recommendations is worthy of consideration and balanced implementation.

Balanced implementation is the key, however. Excessive zeal in forcing any of these recommendations into regulations would seriously hinder the freedom of the researcher to explore and in the final analysis, be counter productive.