Certain Hindu scriptures advise us not to be too attached to the fruits of our actions (Smith, 1965). Thus, in terms of scientific strategies, we should do our research carefully, using the highest methodological standards, and accept the results, whatever they are, with equanimity. Manuscript reviewers should ask themselves primarily whether a study is sufficiently rigorous in its design and, in making their recommendations to the editor, disregard whether it had significant or meaningful results. Let the chips fall where they may, in other words. According to this view, those who survey the literature should accept into their database only well-designed studies that have passed scientific peer review, as required for publication in reputable journals.

Another view of science, attributed to Paul Feyerabend (1993) among others, is that there is no such thing as a “scientific” method. Science means using whatever ingenious ways we can devise to find the truth, with an emphasis on the success of the enterprise. Donald Hebb once said that the literature of psychology is full of studies that were very well done and will not be heard from again. The eminent clinical psychologist David Shakow famously had to discontinue his graduate studies at Harvard for several years because his first attempt at a dissertation, under the supervision of E. G. Boring, had equivocal results (Shakow, 1976).

Here, at the beginning of new Editor Ronald Brown’s watch, the Journal of Pediatric Psychology has in its queue for publication three manuscripts concerning juvenile rheumatic disease as a psychosocial stressor on children and their families. Each of these studies had been duly accepted by his predecessor. Each is, in its way, rigorously designed but with modest results. Brown decided to print these articles in a special section and asked me to comment on them.

The first of these manuscripts, by Cynthia A. Gerhardt and her colleagues, was so well designed that it merited funding by the National Arthritis Foundation, and the financial resources of the researchers were sufficient to pay the families $100 each for taking part. This investigation had a respectable sample size of 64 children with Juvenile Rheumatoid Arthritis (JRA) and their parents (for the most part including fathers as well as mothers), with a relatively high participation rate among the families contacted. It also had a control group of 64 families of the children's classmates, matched for gender, age, and race, rather than relying on the normative samples of the measures used for comparison purposes. The control children were screened to ensure that they did not have any chronic disease. The measures were well-accepted ones. The statistical analyses were sophisticated, with suitable corrections to reduce Type I errors. Power calculations were also included so that at least medium effects could be detected. Nevertheless, the results reported were modest, with the main conclusion being how resilient the families were to the challenge of JRA in the children. It is true that significantly more of the mothers of children with JRA exceeded the clinical cutoff on the SCL-90-R (Derogatis, 1983), and the “caseness” of a family was associated with family supportiveness and conflict. But most of the families of children with JRA were within the average range on the measures used. It would seem that JRA is not necessarily a very severe psychosocial stressor.

The second article, by Jennifer Reiter-Purtill and her colleagues, reports on a controlled longitudinal study of children with juvenile rheumatoid arthritis. Many of the co-authors were the same as in the previous article, all from the Children's Hospital Medical Center and the University of Cincinnati. Once more, the National Arthritis Foundation funded the study. The demands of its design were even more rigorous than those of the previous study in that it involved longitudinal data collection over a 2-year period. As before, a nonchronically ill comparison control group was used. Sample sizes were adequate, including 57 children with JRA and 63 comparison controls, and attrition over time was not too severe. In a multmethod procedure, reports by peers, teachers, and the children themselves were obtained. Collecting data from...
peers actually required the investigators to work in 110 different school classrooms. The statistical analyses were again rigorous, including attention to Type I error rate and power. Once more, the results of the study were modest. In the cross-sectional analyses, children with JRA and comparison controls did not differ. However, longitudinal analyses indicated some decline in social functioning in children with more severe disease. They were less often chosen as best friends than before, compared to children whose disease was in remission.

The third article in the series, by Jennifer Soriano LeBovidge and her colleagues, is a meta-analytic review of the psychological adjustment of children and adolescents with chronic arthritis. The meta-analysis included 21 studies. The literature included was broad, with publication dates ranging from 1974 through 2001. It included articles published in scientific journals but not doctoral dissertations. Participants were children and adolescents age 20 and under. The rheumatic diseases included, other than arthritis itself, were systemic lupus erythematosus, dermatomyositis, vasculitis, sclerodoma, fibromyalgia, and mixed connective tissue disease. Despite the increased power sought by meta-analysis, the results were still modest. Youngsters with arthritis were found to have significantly increased internalizing symptoms compared to comparison controls by about half a standard deviation, but not more externalizing symptoms or poor self-concepts. As might have been expected, studies with their own control groups were more sensitive to these differences than were those that relied on test norms for comparison purposes. It was also found that mixed samples, with other rheumatic diseases in addition to arthritis, were more likely to show such differences. A calculation of the “fail-safe” number suggested that 18 additional studies with null results would be required to change the finding of increased risk of internalizing problems among youths with arthritis. Readers were cautioned that many studies reviewed relied on the Child Behavior Checklist (CBCL; Achenbach & Edelbrock, 1983). Unfortunately for studies of arthritis, the CBCL internalizing scales are not free of items concerning bodily aches and pains.

Now let us discuss these studies and some of the issues they raise. Is it correct to say that children and families are resilient to arthritis, or, in other words, that it has only a rather slight effect on them? Yes, in many cases this seems to be so. This is what the most rigorous research on the subject appears to show.

I will now descend to an anecdotal or qualitative level of scientific discourse. On the basis of experiences of people I am close to, this conclusion seems to be difficult to accept. I had an aunt whose arthritis eventually made it impossible for her to move around very much. She became so sedentary that she gained too much weight, and this situation ultimately contributed to her death. My uncle, who was viewed by all as a most capable person, did his best to take care of her, both physically and emotionally. Himself overweight, he decided to go on a diet to provide an example to her that it was possible to overcome this problem. He did lose a lot of weight and began to feel a sense of triumph, only to discover too late that his weight loss was due primarily to undiagnosed colon cancer. He soon died of this ailment and could no longer take care of my aunt, who herself succumbed not long afterward. This may be an example of a profound psychosocial effect of arthritis, and I have little doubt that similar stories can be found concerning children with JRA and other rheumatic diseases.

The question is simply how such effects can be properly documented scientifically. While I certainly admire rigorous, well-designed studies, I do not think we should necessarily accept their results as the ultimate truth. Instead, we should view equivocal findings as a challenge to be creative and to devise new, more subtle methods to attack the question of the psychosocial effects of chronic disease in children.

One new approach seems obvious in hindsight. It might be a better strategy to concentrate on the study of youngsters with the most severe arthritic conditions, keeping the diagnostic groups as homogeneous as possible. Since these cases are rare, a nationally or internationally funded multisite study would be in order. Perhaps the National Arthritis Foundation and similar organizations in other countries could be enlisted, or perhaps the larger resources of the National Institutes of Health and its counterparts abroad could be tapped.

Another issue raised for me by meta-analysis was that of the scientific status of doctoral dissertations. In my professional lifetime, I have supervised over 50 of these research projects. In the ideal case, the student does an outstanding dissertation, making an original contribution to knowledge, and goes on to publish it in a peer-reviewed scientific journal. Doctoral graduates who do that are most likely to go on to independent academic and scientific careers. It is not uncommon, however, that although the dissertation is a well-designed study and a committee of faculty members including at least one outside the department duly approved the plan for it, the results are inconclusive. This was evidently David Shakow's situation at Harvard in 1928, and his advisor, E. G. Boring, said that this was not acceptable, that he had to begin and complete another project to obtain his Ph.D. Indeed, Shakow did so after a 14-year detour as chief psychologist at
Worcester State Hospital. Shakow’s dissertation was accepted by Harvard in 1942, under Gordon W. Allport, a new advisor, and indeed proved to be a milestone in Shakow’s subsequent career as perhaps the world’s leading clinical psychologist (Shakow, 1976). I agree with Boring that inconclusive doctoral dissertations do not make much of a scientific contribution, and I see no reason that they should be included in meta-analyses. However, most psychology doctoral programs today do accept carefully planned studies with equivocal results as the basis for granting Ph.D. degrees, and I have supervised my share of them. The students involved have generally gone on to worthwhile careers, mostly involving undergraduate teaching or direct clinical service rather than research. Looking over my personal list of former students whose dissertations fell into this category, I can identify very few who ended up in tenured faculty positions.

What about the student who does an outstanding dissertation but has no interest in a research career? In writing this commentary, I have in mind one such student whose Ph.D. research concerned juvenile arthritis. The study was not grant-supported, and the investigator could not pay the families $100 each to participate. For such reasons, the dissertation had a smaller sample size than the ones under discussion here and had no matched control group. Nonetheless, the findings were placed into solid theoretical context and supported the hypotheses: increased levels of daily hassles and stress related to the child’s juvenile rheumatic disease were significant predictors of mother’s distress. This paper was reported at a scientific meeting and was given a prominent place by those who organized the program. But after approximately a decade, this study has never been written up for publication, and I doubt now that it will ever appear in the regular literature. By my count, about a third of the dissertations I supervised ended up in this category of “publishable but unpublished.” Nevertheless, these studies are available to the public through University Microfilms International. Their titles are listed in the PsycInfo database. Let me therefore suggest that those who review the literature in the future and those who conduct meta-analyses sift their way through the relevant unpublished dissertations. There is some real gold to be mined there.

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