be required to be of equal precision. For example, in a clinical trial for a new drug it is not uncommon to include two controls, a placebo and an existing active drug. For regulatory purposes, it often is necessary to demonstrate the magnitude of the activity of the new drug, and therefore the comparison with the placebo is the more important. It is not always necessary to demonstrate to the regulatory agency that the new drug is more effective than the existing drug. But for the purposes of the pharmaceutical company's marketing efforts, in fact, the second comparison is likely to be the more important. This latter comparison would generally be two-sided. Such considerations should be taken into account before determining how to optimally allocate the available experimental resources to different competing test treatments and the controls.

A final brief note concerning nomenclature. We suggest that the word "control" should be used rather than "standard" because the latter sometimes refers to a *known* benchmark value; this is the case, e.g., in the physical sciences (although, not always in the biological sciences). Clearly, if the comparisons are made with a known benchmark then the device of blocking cannot be used.

We again express our gratitude to the authors for this state-of-the-art survey and to the editor for giving us an opportunity to comment on it.

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Comment

William I. Notz

Sam Hedayat, Mike Jacroux, and Dibyen Majumdar are to be congratulated on this very thorough survey of optimal designs for comparing test treatments with a control. This paper is an excellent starting point for anyone wishing to do research in this area and it is a nice reference for those of us actively engaged in such research. Unfortunately, any such survey begins to go out of date the moment it is completed as research goes ever forward. The authors can do nothing about that, however.

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Let me begin my comments by describing the history of my own involvement in this area of research. If nothing else, this will at least add a little historical color.

I first became acquainted with this area of research as a relatively new assistant professor at Purdue. In the Autumn of 1980, Bob Bechhofer came to Purdue as a colloquium speaker. He spoke about results he and Ajit Tamhane had obtained on incomplete block designs for comparing test treatments with a control and which were soon to appear in Bechhofer and Tamhane (1981). One unsolved aspect of the research, which Bob invited those of us in the audience to try and solve, involved constructing finite sets of designs (so-called minimal complete sets of generator designs)