Carl Morris and I worried about this a lot in our 1971 and 1972 papers, and also in the specific examples of 1975. Our hard-working 18 baseball players were offered as a simplified test case for thinking about the trade-offs between d_0 and d_1; see also Section 8 of Efron (1982).

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1. Introduction. Professor Brown has presented a comprehensive discussion of multiple regression in relation to admissibility and the ancillarity principle. He concludes that there is a paradox: That the results with multiple regression contradict "the widely held notion that statistical inference in the presence of ancillary statistics should be independent of the distribution of these ancillary statistics." The reader thus receives the impression that there is something wrong or inappropriate with conditional inference. The basic assumption of conditional inference is that only the conditional model is examined and that information from the marginal model is ignored. This is not a "notion" that inference "should" be independent of the marginal model as interpreted by Professor Brown, but that inference should not use or make reference to that model.

The technical point then is that there is a conflict between conditional methods and classical optimality criteria. We feel that this should be no surprise, let alone paradox. In Section 5 we present a simple example that also illustrates the conflict.

Our broader viewpoint is that the familiar optimality criteria of statistics are in fact in conflict with scientific principles and that this provides the explanation for the issues raised in the paper; see Section 2.

In a concluding Section 6, we argue that conditional methods are close to the core of the scientific method, and note that conditional inference from both a theoretical and pragmatic orientation is a recently active area of research and presents exciting possibilities for research development.

Standard statistical theory uses a range of optimality criteria, such as maximum power for a test at a given size α, minimum length for a confidence