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Comment

A. Buja and C. Hurley

Reading the authors' paper was very gratifying for us: as it happens, we have been working on the integration of multivariate analysis and graphical data analysis as well. We are delighted to observe that our separate efforts converged to some degree. While we may differ in details of implementation, human interface and computing philosophy, our independent efforts indicate a certain necessity in the idea of marrying classical multivariate analysis and the more recent high-interaction graphics tools. A paper by us on this subject is in press in the *SIAM Journal on Scientific and Statistical Computing* (Hurley and Buja, 1990). It is based on the Ph.D. thesis of Hurley (1987). The multivariate methods which we considered were the same as those of the authors with the exception

of their successive orthogonalization procedure. The authors carried certain ideas of visual inference and assessment considerably further than we did (for now, we have not gone beyond what is documented in Buja, Asimov, Hurley and McDonald, 1988). On the other hand, we may claim a tighter coupling of multivariate analysis and graphics, as we will show below.

MULTIVARIATE ANALYSIS (MA) AND GRAPHICAL METHODS

A basic motivation behind the authors' and our endeavor is the simple insight that MA allows us to generate a wealth of potentially illuminating data projections. Curiously, the first attempts at combining interactive graphics with automatic methods for finding informative projections were based on projection pursuit rather than classical MA. Surely, the latter can be interpreted as a subset of the former, but this view does not do justice to MA. It is more useful to interpret MA as a set of methods for changing coordinate systems in a data-driven way. One reason for the initial lack of interest in the graphical and explor-

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