turn out idiot savants in the sciences as being more likely to be useful to the state. But if mathematical intelligence is strongly associated with emotional deprivation and social alienation, then even we earthy, super-honest, solid, and simple native Americans–the qualities that Ulam admires in us–are in for trouble.

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Interpolation spaces, an introduction, by Jöran Bergh and Jörgen Löfström, Springer-Verlag, Berlin, Heidelberg, New York, 1976, x + 204 pp., \$24.60.

We don't want to get involved in the current, often heated, debate as to what constitutes pure, as opposed to applied, mathematics. We just want to start this review by saying that the theory of interpolation of operators is an impressive application of pure mathematics to pure mathematics. The purists (?) are welcome to wrangle over the semantics.

The subject has its origins in classical Fourier analysis, where it was conceived as an elementary means of finding L^p-estimates. The very nature of interpolation theory, however, is functional-analytic: typically, a linear operator T is bounded between spaces X_α and Y_α when $\alpha = 0$ and $\alpha = 1$, and one wants to conclude that T carries X_α to Y_α whenever $0 < \alpha < 1$. Such problems arise in many areas of analysis, and the abstract theory has always been influenced, even guided, by the potential applications to such areas as harmonic analysis, approximation theory, and the theory of partial differential equations. As a result, interpolation has no one place to call home; it is, quite simply, interesting mathematics.

Its success, like that of a good executive, stems from its ability to handle specifics while operating on a generally higher plane. Consider, for example, the thorny Fourier and Hilbert transforms. A great deal of highly-specialized information is known about these operators, and it rarely comes for free. Yet, remarkably enough, the "correct" L^p-estimates can be derived from general interpolation theorems valid for *all* linear operators.

Such examples show that it is worthwhile to solve the interpolation problem simultaneously for all operators. It also changes the face of the problem, because the operators themselves, since only their linearity is important, tend to fade into the background. Interpolation theorems then are more properly construed as statements about the underlying system of spaces. This observation, simple as it is, represents the point of departure from classical L^p-interpolation (the Riesz-Thorin and Marcinkiewicz theorems) into the abstract theory of interpolation spaces and interpolation methods.

Suppose $\{X_\alpha\colon 0 \leqslant \alpha \leqslant 1\}$ is a family of Banach spaces for which an interpolation theorem is desired. The idea is to construct, using only the extremal spaces X_0 and X_1, an intermediate space $(X_0, X_1)_\alpha$, say, for which the interpolation property *automatically* holds. Several of these constructions, called *interpolation methods*, are known. What remains, and this is often the hard part, is to identify the *interpolation space* $(X_0, X_1)_\alpha$ with the original space X_α.