

Authors' and lecturers' insensitivity to the needs of most readers and listeners for basic down-to-earth examples is one of the greatest sins mathematicians commit and only tends to reinforce barriers between disciplines. For example, it is now evident that the subjects of bifurcation theory and singularities of mappings have a great deal in common and a great deal to offer each other; a brick wall of noncommunication and reticence took almost a decade to break down. (Nirenberg's Courant Institute notes on Nonlinear Analysis were instrumental in this bridging.) There *is* room for improvement in Dieudonné's treatise in this respect.

6. Overview. Most mathematicians write advanced books for themselves; to set down their views for the record, to educate a close circle of followers or simply for their own ego, prestige or promotion. It is a rare mathematician who is earnest about making the necessary effort to break down barriers and to further mathematical evolution by teaching aspiring mathematicians with sensitivity and understanding. I believe Dieudonné is one of this rare breed.

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Infinite dimensional linear systems theory, by Ruth F. Curtain and Anthony J. Pritchard, Lecture Notes in Control and Information Sciences, vol. 8, Springer-Verlag, Berlin-Heidelberg-New York, 1978, viii + 297 pp., \$14.80.

As I have been interested in this area for a number of years, it may be significant to say at the outset that this is a book I wish I had written myself. The book literature in infinite dimensional linear systems, or distributed parameter systems, to use the favored engineering terminology, is not very extensive. Perhaps the first significant contribution to that select category was A. G. Butkovsky's *Theory of optimal control of distributed parameter systems* (American Elsevier Publ. Co., New York, 1969; the Russian version appeared in 1965). This pioneering work was followed by J. L. Lions' landmark volume *Optimal control of systems governed by partial differential equations* (Springer-Verlag, New York, 1971; the French version appeared in 1968). There have, of course, been numerous journal articles, published conference proceedings, bibliography listings and review articles. In one of the last (SIAM Review, Vol. 20, 1978) I took some pains to point out that there is a distinct difference between the notions and methodology of *optimal* control and those of general control systems theory. The latter is a study of dynamical systems which involve control parameters explicitly intended for use in modifying systems behavior together, usually, with a set of admissible observation functionals providing information on the system state. Systems theory primarily involves such concepts as controllability, stabilizability, observability, etc. While the Butkovsky and Lions contributions do not entirely neglect these basic systems theory concerns, I think it is fair to say in both cases that the emphasis was placed on optimization. Thus it is particularly gratifying to be able to welcome the work by Curtain and Pritchard which, while not neglecting