

Of course it isn't too important but I've always thought that Pitt is responsible for the result that any $T: l_p \rightarrow l_q, p > q$, is compact. The authors ascribe this to Paley (without reference). But, enough of this!

The book is highly enjoyable reading for anyone and must reading for anyone interested in vector measures or the geometry of Banach spaces.

The book, like most first editions, has misprints. No one will have difficulty with "language operators" (p. 148) or "lconverging" (p. 182) [when read in context] and serious readers will find the subscripts lost or interchanged in some of the displays.

Thus the only serious mistake is the misspelling of the reviewer's name (p. 253).

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Jordan pairs, by Ottmar Loos, Lecture Notes in Math., vol. 460, Springer-Verlag, Berlin and New York, 1975, xvi + 218 pp., \$9.50.

Jordan pairs are a generalization of Jordan algebras and Jordan triple systems.¹ The archetypal example of a Jordan algebra is the hermitian $n \times n$ matrices $x^* = x$ (for $x^* = \bar{x}'$ the conjugate transpose) under the product $U(x)y = xyx$, while an example of a Jordan triple system is the rectangular $n \times m$ matrices under $P(x)y = xy^*x$. Such Jordan systems have recently come to play important roles in algebra, geometry, and analysis. In particular, the exceptional Jordan algebra $H_3(K)$ of hermitian 3×3 matrices with entries from the Cayley numbers K has important connections with exceptional geometries, exceptional Lie groups, and exceptional Lie algebras.

Although the structure of finite-dimensional Jordan algebras is well known, the structure of Jordan triple systems is generally known only over algebraically closed fields. The main obstacle to attaining a complete theory for triple systems is the paucity of idempotents: most nonassociative structure theories lean heavily on Peirce decompositions relative to idempotents, and a general triple system may have few "idempotents" x with $P(x)x = x$. For example, the triple system obtained from the real numbers via $P(x)y = -xyx$ has no nonzero idempotents at all. However, a well-behaved triple system does have many pairs of elements (x, y) such that $P(x)y = x$, $P(y)x = y$ (in the above example, for any $x \neq 0$ we may take $y = -x^{-1}$). Such a pair furnishes a pair of simultaneous Peirce-like decompositions of the space, which could provide useful structural information if the two didn't keep getting tangled up in each other.

Even in Jordan algebras, many concepts involve a pair of elements (x, y) . Frequently this takes the form of x having a certain property, such as idempotence ($x^2 = x$) or quasi-invertibility (invertibility of $1 - x$), in the y -homotope; this roughly corresponds to the element xy having that particular property, and so serves as a substitute for the associative product xy which doesn't exist within the Jordan structure. (The y -homotope of an associative

¹For a quick background survey of these systems see the article, *Jordan algebras and their applications* in this issue.