between complete metric spaces extends to a homeomorphism of two G_δ subsets.

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Dimension theory of general spaces, by A. R. Pears, Cambridge University Press, London, New York, Melbourne, Cambridge, 1975, xii + 428 pp., $47.50.

Interest in making the concept of dimension mathematically rigorous probably began in 1890 with the appearance of an example due to Peano of a continuous map of the unit interval onto a triangle and its interior. This created the uneasy possibility that perhaps two Euclidean spaces of different dimensions might be homeomorphic. It is hard to imagine what mathematics might have been if this had turned out to be the case. It was a close call! Fortunately, L. E. J. Brouwer gave a proof in 1911 that if R^n and R^m are homeomorphic, then $n = m$. However, it was not until the 1920's that a topological theory of dimension began to be developed. The work of K. Menger and P. Urysohn as well as others brought into existence an elegant theory of dimension applicable to all separable metric spaces. It was only incidental to this theory that Euclidean n-space was n-dimensional. In true mathematical tradition, if the unthinkable had happened, dimension theory would have continued with the same fervor. The force of mathematical inquiry would have developed a mathematical structure similar to what we have today, except for the unfortunate footnote that Euclidean n-space is not n-dimensional! Mathematics would have suffered, but not dimension theory.

In 1928 the first text in dimension theory appeared, *Dimensionstheorie* by K. Menger. This book has historical value. It reveals at one and the same time the naïveté of the early investigators by modern standards and yet their remarkable perception of what the important results were and the future direction of the theory. Copies are difficult to obtain now, but it is worth the effort.