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Given a Quillen superconnection on a  $\mathbf{Z}/2$ -graded vector bundle over a manifold  $M$ , we consider a notion of parallel transport along superpaths in  $M$ . This gives rise to a supersymmetric 1-dimensional field theory over  $M$ . It turns out, there are at least as many 1-dimensional field theories over  $M$  as superconnections over  $M$ . (Received February 13, 2006)