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Martin R. Bridson* (bridson@maths.ox.ac.uk), Mathematical Institute, University of Oxford, 24-29 St. Giles, Oxford OX1 3LB, England. *Finitely presented groups: Their curvature, grammar, and isoperimetric inequalities.*

In this lecture I shall describe recent results that elucidate the important role that various manifestations of non-positive curvature play in the study of finitely generated groups.

I shall begin by explaining why non-positive curvature arises at the heart of combinatorial group theory. This explanation proceeds via a connection with classical isoperimetric inequalities. It leads us to consider various constraints on the optimal manner in which one can express the elements of a given finitely generated group as words in the generators. The constraints that arise naturally in this context are grammatical as well as geometric in nature, and as one unravels the inter-dependency of these constraints one encounters subtle issues in both geometry and group theory. (Received July 24, 2000)