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Thomas Q. Sibley* (tsibley@csbsju.edu), Mathematics Department, St. John's University,
Collegeville, MN 56321-3000. *Groups of Graphs of Groups.*

We explore a graphical representation of groups differing from Cayley digraphs. While the automorphism group of a Cayley digraph is always isomorphic to the original group, the edge colored graphs we discuss can have larger groups of automorphisms. In addition, these graphs generalize to a family of loops with interesting properties, including Lagrange's Theorem and the Sylow Theorems. We discuss known results and open questions for these graphs and their groups. (Received September 06, 2010)