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**H. A. Kierstead, A. V. Kostochka, T. Molla and E. C. Yeager\*** (yeager2@illinois.edu).

*Disjoint Cycles and a Question of Dirac.*

In 1963, Corrádi and Hajnal famously proved the following: If a graph has minimum degree at least  $2k$ , and at least  $3k$  vertices, then it contains a set of  $k$  vertex-disjoint cycles. The degree bound is sharp, but has been improved by considering Ore-type conditions. That is, by bounding the minimum degree sum of nonadjacent vertices.

We discuss a relaxation of the minimum degree requirement, and as a consequence answer a 1963 question posed by Dirac: which  $(2k - 1)$ -connected hypergraphs do not have  $k$  disjoint cycles?

In discussing the existence of disjoint cycles in a graph, we also use techniques of equitable coloring. Our results, aside from having implications about the existence of disjoint cycles, also prove a small case of an Ore-type analog to the Chen-Lih-Wu conjecture. The Chen-Lih-Wu conjecture can be seen as the equitable-coloring equivalent of Brooks's Theorem. (Received September 23, 2014)