A topological group is said to be almost connected if the quotient group of its connected components is compact. This book exposes a Lie theory of almost connected pro-Lie groups (and hence of almost connected locally compact groups) and illuminates the variety of ways in which their structure theory reduces to that of compact groups on the one hand and of finite dimensional Lie groups on the other. It is, therefore, a continuation of the authors’ monograph on the structure of compact groups (1998, 2006, 2014, 2020, 2023) and is an invaluable tool for researchers in topological groups, Lie theory, harmonic analysis, and representation theory.