

Oxford Series in Ecology and Evolution

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Living things are organized in a hierarchy of levels. Genes group together in cells; cells group together in organisms; and organisms group together in societies. Even different species form mutualistic partnerships. Throughout the history of life, previously independent units have formed groups that, in time, have come to resemble individuals in their own right. Evolutionary biologists term such events 'the major transitions'. The process common to them all is social evolution. Each transition occurs only if natural selection favours one unit joining with another in a new kind of group. This book presents a fresh synthesis of the principles of social evolution that underlie the major transitions, explaining how the basic theory underpinning social evolution—inclusive fitness theory—is central to understanding each event. The book defines the key stages in a major transition, then highlights the shared principles operating at each stage across the transitions as a whole. It addresses in new ways the question of how, once they have arisen, organisms and societies become more individualistic.

Principles of Social Evolution demonstrates how social evolution lies at the heart of the history of life, shaping biological organization across different taxa at all hierarchical levels. It will be suitable for graduate-level students taking courses in evolutionary biology, behavioural ecology, and evolutionary genetics, as well as advanced undergraduates, academics, and researchers in these fields.

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