Plate tectonics marks the dawn of modern geophysics and it provides a framework for decades of subsequent work aimed at understanding the underlying driving force for the process, mantle convection. As a result of this ongoing effort, a clearer, more sophisticated view of both the structure and dynamics of the mantle has emerged. I will use a suite of case studies to argue that embracing this postmodern view of the Earth is crucial to progress in a number of outstanding problems in ice age sea level and climate.