Childhood has been the focus of research and debate among anthropologists, developmental psychologists, demographers, economists, and other social scientists for fifty years (Konner 1991; Panter-Brick 1998). As a result, there are diverse research traditions and trajectories that have arisen with varying levels of intercommunication. Recent theoretical developments in human evolutionary ecology have shifted away from description of the normative characteristics of childhood across societies towards exploration of the evolutionary history of primate ontogeny and the fitness consequences of a life history that has childhood as a component (Blurton Jones 1993; Blurton Jones et al. 1989, 1997, 1999; Bogin and Smith 1996; Charnov 1993; Charnov and Berrigan 1993; Hawkes et al. 1997, 1998; Janson and van Schaik 1993; Kaplan et al. 2000).

Leigh (2001) has identified four models based in life history theory that have recently been used to explain the slow growth and extended juvenility of primates in general and humans in particular. The brain growth model asserts that slow growth is a consequence of the amount of learning-based knowledge necessarily acquired by adulthood. Essentially, slow growth provides the time needed to fully program the brain with the information needed for adult competence (Bogin 1999). The pleiotropic model developed by Charnov and colleagues (Charnov and Berrigan 1993) argues that among primates the benefits of continued growth to the
production of offspring outweigh the costs of delaying reproduction when adult mortality is low. In this case, natural selection is not directly acting to extend juvenility, but rather the juvenile period is an artifact of slow growth. Janson and van Schaik (1993) have proposed an ecological risk aversion model, which assumes that in primates the trade-off between foraging efficiency and predation risk selects for low growth rates. The intragroup competitive costs to younger individuals of reduced rates of energy acquisition are outweighed by the reduction of predation risk from being surrounded by more experienced and older individuals who provide increased predator detection and avoidance. The last model identified by Leigh is the embodied capital model of Kaplan and colleagues (Kaplan 1996; Kaplan and Bock 2001; Kaplan et al. 1995, 2000). In this model, large body size and the acquisition of skills and knowledge attainable through slow growth accrue greater net benefits in the form of high levels of production during the adult period. According to Leigh, these models produce the following predictions: the brain growth model predicts rapid growth early in ontogeny but is not consistent with rapid periods of growth after the brain has ceased growing; the adult mortality model accurately predicts extension of all ontogenetic periods but does not explain variation in growth rates; the ecological risk aversion model is consistent with variation in growth rates during ontogeny but may not pertain to humans, which show extensive female provisioning of offspring; and the embodied capital model is consistent with both the prolongation of early ontogenetic phases as well as variation in later growth rates.

Given this current state of theoretical development, today's researchers need to conduct careful analyses of children's growth, learning, resource consumption and production, and development using data collected with explicit attention to socioecological conditions in order to begin to discriminate among these models. The five papers in this collection, originally presented at the 1999 Annual Meeting of the Human Behavior and Evolution Society, examine some of the theoretical models specified above using four sets of data collected in very different ecological contexts. The importance of these papers lies both in their theoretical contributions and in the data specifically collected to examine life history models.

Bock introduces the punctuated development model of the relationship between growth and learning and tests a set of hypotheses derived from this model using time allocation, anthropometric, and experimental task performance data from a multiethnic community of forager/agropastoralists in the Okavango Delta of Botswana. He explores the formation of adult competency in relation to the socioecological context, including subsistence ecology and family composition, of individual children. Bock finds that the development of adult competency in specific tasks entails a step-like relationship between growth and learning in the ontogeny of