Letter to the Editor

Why Are Pygmies So Short? A Defense of Migliano’s Hypothesis

Migliano has formulated and tested in her three publications (Migliano 2005; Walker et al. 2006; Migliano et al. 2007) a hypothesis explaining pygmy size as the result of a “fast” life history strategy (Charnov 1993) in which early start of reproduction and growth termination are adaptive responses to high external mortality rates. We thank Becker et al. [2010 (this issue)] for the careful analysis of our work and the editors of Human Biology for the opportunity to clarify the points made in their commentary. Their criticisms are in part related to a regrettable typo in a figure that we did not see at the page proof stage; the other points do not seriously challenge our hypothesis, as discussed in what follows.

The first criticism of Becker et al. (2010) is that we rely on a “threshold” size between pygmies and nonpygmies, which is at odds with life history theory, which postulates a continuous positive correlation between adult stature and mortality rates across populations. Becker and colleagues apparently are not aware that this is exactly the thesis originally proposed by Migliano (2005) in her dissertation and repeated in her two other publications (Migliano et al. 2007; Walker et al. 2006). Migliano’s hypothesis for pygmy size is an application of Charnov’s (1993) life history continuum across mammals to current human diversity, with pygmy groups and tall East African pastoralists occupying its fast and slow extremes. For example, Migliano (2005: 262) argues that “on one side, mortality and the chances of dying before reproducing select for earlier reproduction and consequently smaller body size; on the other, fitness increases with bigger body size, selecting for more time invested on growth and consequently later age at sexual maturation. The balance between these selective forces varies among different populations according to differences in mortality rates and according to how much the increase in body size adds to fertility.” To demonstrate the continuum, seven populations were originally analyzed. After reading Migliano (2005), Walker proposed to incorporate data from 15 other populations, and analyses successfully confirmed the proposed fast-slow continuum across humans (Walker et al. 2006).

Migliano’s continuum hypothesis was proposed as a solution to a long-standing problem in anthropology: the evolution of the human pygmy phenotype. Until recently, the few answers were largely untested and were based on “special case” scenarios (forest vs. nonforest locomotion; hot vs. cold environment; undernourished vs. well-nourished populations; Diamond 1991). Our hypothesis postulates exactly the opposite view, using an established zoological theory (Charnov 1993) to explain human diversity. The claim that our results depend on an arbitrary categorization of humans into pygmies vs. nonpygmies is surprising: No single plot, table, or analysis in Migliano’s three publications requires a distinction between pygmy vs. nonpygmy groups.

The second criticism by Becker et al. (2010) relates to our demographic data. Applying ecological models to humans is always a hard task, but we were