

than those of native populations in Asia or Europe who live at similar latitudes. Most anthropologists estimate these populations migrated from the Old World perhaps 10,000–15,000 years ago, which means they have had far less time to experience the selective pressures associated with local solar radiation levels anywhere on the continent. In addition, these migrants were modern humans with many cultural adaptations to help them modify the negative effects of solar radiation, including both protective clothing and a vitamin D-rich diet. Obtaining vitamin D from food rather than sunlight has thus altered selection pressures that otherwise would have favored lighter skin. Thus, the darker skin pigmentation of circum-polar peoples may be the consequence of selection pressures for darker skin as a protection against solar radiation reflected from snow and ice (Jablonski 2004, 612).

**Intelligence** Intelligence may be the most striking attribute of human beings. However, attempts to define and measure "intelligence" have a long history of controversy. Is intelligence a single, general, unitary "thing" that people have more or less of? If not, what attributes and skills ought to count? Psychologist Howard Gardner (2000) points out that "Every society features its ideal human being" (1). In his view, "the intelligent person" in modern Western societies has been exemplified by individuals who could do well at formal schooling and succeed in commerce. It is perhaps not surprising, then, that tests developed in Western societies purporting to measure individuals' intelligence quotient (IQ) traditionally have equated high scores on verbal and mathematical reasoning with high intelligence.

But these are not the only areas in which humans display differing levels of ability or skill. Gardner, for example, has long argued that in addition to linguistic and logical-mathematical intelligence, human beings possess different types of intelligence, including bodily-kinesthetic intelligence (displayed by exceptional athletes and dancers), interpersonal or intrapersonal intelligence (displayed by individuals with exceptional understanding of social relations or their own psyches), musical intelligence, spatial intelligence, and naturalist intelligence (which attunes us to plants and animals in the world around us). In Gardner's view, these types of intelligence can probably be enhanced in all individuals, given the right kind of environmental support. Indeed, even linguistic intelligence and logical-mathematical intelligence require the proper environmental support—long-term training and practice in rich cultural settings—to produce the highest levels of achievement. Because the definition of intelligence is so controversial and because not all forms of intelligence are equally

the skin. These advantages of fur, however, are reduced if the fur is wet with sweat, which can happen if the temperature rises or the organism's activity level increases. Under these conditions, "thermal sweating as a method of cooling becomes more important" and it is "greatly facilitated by the loss of body hair" (Jablonski 2004, 599). It is now hypothesized that the last common ancestor of humans and chimpanzees probably had light skin covered with dark hair, like other Old World primates. However, the loss of hair created new selection pressures in favor of increasingly darker skin, such that by 1.2 million years ago (mya), early members of the genus *Homo* would have had darkly pigmented skin (Rogers et al. 2004). In addition, contemporary human populations all seem to show sexual dimorphism in skin color, "with females being consistently lighter than males in all populations studied" (Jablonski and Chaplin 2000; Jablonski 2004, 601).

Exposure of human skin to solar radiation has complex and contradictory consequences. Too much sunlight produces sunburn, and UVB destroys a B vitamin, folic acid, which is a crucial factor in healthy cell division. At the same time, solar radiation also has positive consequences: UVA stimulates the synthesis of vitamin D in human skin. Vitamin D is crucial for healthy bone development and other cellular processes. According to Jablonski and Chaplin (2000), these selective pressures have produced two opposing clines of skin pigmentation. The first cline grades from dark skin at the equator to light skin at the poles and is an adaptive protection against sun damage. The second cline grades from light pigmentation at the poles to dark pigmentation at the equator and is an adaptive response favoring vitamin D production. In the middle of these two clines, they argue, natural selection favored populations with enhanced phenotypic plasticity who could tan more easily during hot, sunny seasons but easily lose their tans in seasons when temperature and sunlight levels decreased.

Jablonski (2004) concludes that "the longer wavelengths of UVR . . . have been the most important agents of natural selection in connection with the evolution of skin pigmentation" (604). At the same time, because people have always migrated, different populations vary in the numbers of generations exposed to the selective pressures of any single regime of solar radiation. Human cultural practices (wearing clothes, using sun block, staying indoors) have shaped the levels of pigmentation and levels of vitamin D production in particular individuals or populations. Gene flow following the interbreeding of human populations with different selective histories would further complicate the relationship between the skin colors of their offspring and selection pressures imposed by local levels of solar radiation. Many of these factors may explain why the skin colors of the native people of South America are lighter