

figuring out what our kids have been up to or determining what killed our tomato plants. Inference is an extremely important way of knowing, but it involves acceptance of the idea that the universe is real, understandable, and operates uniformly. For example, Becky was not “there” to witness her start in life from the fusion of an egg and sperm, but nonetheless, she probably accepts that this in fact is how she was conceived. However, it’s just an inference.

A greater problem stems from Becky Bosley’s misunderstanding of evolution (which she shares with many others). Humans (or any other species) cannot be considered “more highly evolved” since all extant species stem from lineages that have spent exactly the same amount of time on Earth. Secondly, she misunderstands the basic tenet of evolution, which is that mutations are random with respect to adaptive value. She might be able to

imagine that humans would be better off reabsorbing the menstrual lining than sloughing it off, or that plants should fix their own nitrogen. However, perhaps mutations that would lead to these traits have not arisen. There are in fact, an infinite number of advantageous traits that species could have, but don’t. It is important to explain to students that organisms do not “get what they need” in evolution, despite our ability to think that they would be better off if they had those traits.

On a final note, “frequent and heavy” human menstruation is well-understood by comparisons among human groups. In societies without modern birth control methods, human females ovulate infrequently, spending most of their lives either pregnant or lactating. Indeed, some women menstruate fewer than 20 times in a lifetime! Thus, it is likely that selection has not acted very strongly on reducing “losses” due to menstruation.

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Correction: Regarding the September 2002 About Our Cover, Walter H. Sakai, Professor of Biology at Santa Monica College and a Research Associate in the Entomology Section of the Natural History Museum of Los Angeles County in California has pointed out that in addition to the Impala, the family Bovidae includes the American Bison, Mountain Goat, Muskox, Bighorn Sheep, and Dall’s Sheep in North America as well as the diversity of ungulates in Africa. Also, Bovidae is a family in the order Artiodactyla, and, contrary to the statement that Impala inhabit the wooded savanna of East Africa, it is found throughout the southern half of Africa below the tropics.

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