Baraminology, biology and the Bible

In 'Baraminology, biology and the Bible', on page 54 of *TJ* **18**(2), 2004, Alex Williams stated, 'When organisms reproduce, they pass on whole cells, unchanged, to their offspring.' This may be well known, but it was information that I had not appreciated before. I had always assumed that during fertilization, the new embryo began development with only one cell, which rapidly divided, and that the energy for the division and creation of the new cells was derived from the mother. The article seems to imply that additional intact cells are transferred. Is this now an accepted part of the process? If so, then I suspect there would be many more of your readers who would be interested in a paper expanding on this process.

The implications, if I have understood Alex Williams' comment correctly, seem immense, as a complete cell contains far more information than the DNA within it. The complete cell might even contain the information on which of the body's properties have been found useful for survival up to the date of conception. A giraffe's long neck, a soldier's height and reach, indeed all Lamarkian processes.

Two related questions: first, 'How specialized is the initial cell? Is it very different from one from any other part of the body?; second, 'How different are the initial cells of a chimp and a human?'

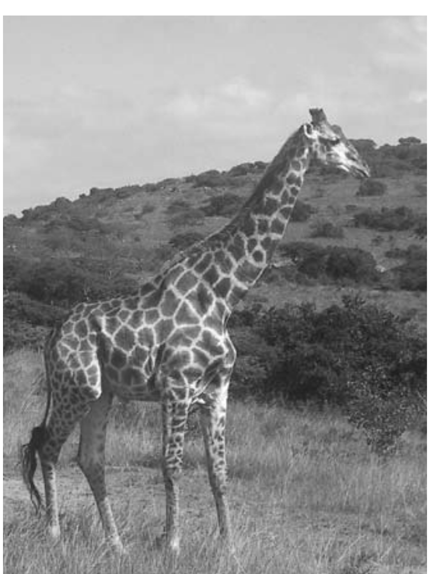

Photo by Derek Nutley <morguefile.com>

As a mathematics professor who is now a Christian minister, I started to subscribe to your journal because of your articles on cosmology, but now I always find all your articles of interest, even when, as in this case, I can't claim any specialist knowledge.

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Alex Williams replies:

Laurence Dixon raises some interesting questions that go beyond my expertise to answer, but I can clarify what I meant in the sentence that he quotes. During sexual reproduction, two gametes (specialized sex cells—ovum and sperm in humans) come together to form one new cell, the zygote. The offspring then develops by division and subsequent growth from the zygote. Most of the architecture (cell membranes, cytoplasm, organelles, cytoskeleton, etc.) comes entirely from the ovum, with the sperm contributing little more than the father's chromosomes. The important genetic changes that occur during this process (recombinations, mutations) are confined to the DNA in the chromosomes (there are small amounts of DNA in some organelles). The cell that the offspring inherits is the cell that is given to it by the mother. The mother gives the child one of her own cells, and that cell continues all of its cellular activities quite seamlessly during the transfer process. That is what I meant when I said, 'When organisms reproduce, they pass on whole cells, unchanged, to their offspring.'

This has profound consequences for the process and content of inheritance, but creation biologists have been slow to take up the idea. Perhaps an analogy might help. If we use a computer as a surrogate for the cell, then the hardware would be analogous to the cell and the software would be analogous to the chromosomes. Software can change, just as chromosomes can change, but hardware is normally fixed. If we now imagine that the computer could reproduce itself (i.e. produce another computer just like itself) then it would have to pass on in the hardware an exact copy of the original, or the 'child' version would not be able to read the software. It could, however, do some 'recombinations' or 'mutations' on the software without necessarily causing a malfunction.

Creation biology requires a double mechanism of inheritance. At one level, organisms were created to reproduce 'after their kind'. That is, dogs produce dogs, and humans produce humans, just as we observe in the real world. This is technically called 'stasis' and there must be some mechanism in cells for maintaining stasis because chromosomes can (theoretically, at least) vary at any and every point. If inheritance occurred only via chromosomes, then we would expect to see a continuum of variation between all creatures (as Darwin expected to see in the fossil record). The second level is that organisms *do* vary in small ways from their parents, and God's command to 'fill the earth' would necessarily imply an ability to adapt to a multitude of different ecological niches in widely differing environments. Since, during inheritance, cells stay the same while chromosomes change, I suggest that here is the obvious doublet: cells maintain the stasis of kinds, while chromosomes provide species-level variation to allow adaptation to changing environments. I have recently prepared for *TJ* a three-part article on biological inheritance that considers these matters in more detail. See part I and II in *TJ* 19(2):29–35 and 36–41, and part III in this issue, pp. 21–28.

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