favoured in species where eggs are fertilised inside the female and embryos are nurtured internally. Potentially, internal incubation of embryos could allow asexual mothers to discard genetically damaged offspring before they are born, so postponing the genetic 'day of reckoning' that threatens all parthenogenetic species. If this theory is right, then parthenogenesis should be more common in live-bearing mammals than egg-laying reptiles. Yet as we have seen, this is clearly not the case.

In fact, it is now thought that parthenogenesis is actively prevented in mammals, including ourselves. Studies of early embryos have shown that genes inherited from the father are necessary for normal formation of the placenta, the organ that keeps the fetus alive by allowing it to draw nutrients from its mother's blood. Somehow the embryo knows that these genes came from the sperm rather than the egg, and will use them only if they came from the sperm – a process called genetic imprinting. Because of this, an embryo that did not have a sperm involved in its formation cannot make a placenta and so cannot be born.

The unusual dependence of the placenta on paternal genes has given mammals a neat system for preventing human parthenogenetic babies. Whether this system evolved specifically to prevent mammalian parthenogenesis is unclear, but even if it has developed for some other reason, it is hard to see how it could allow parthenogenetic humans. Even though unfertilised eggs can start to divide, and can develop for over a week, the resulting all-maternal embryos can never survive until birth without a placenta. Immaculate conception may happen, but virgin birth is out of the question.

A recent chance discovery has confirmed the need for paternal input in human pregnancy. In 1995, a research team in Edinburgh was studying a one-year-old boy, 'F.D.', with an unusual set of abnormalities. The left side of his face is slightly smaller than the right side, his uvula is split into two (the uvula is the dangly thing that hangs down at the back of your throat) and he has mild learning problems. When the researchers studied the genes in a blood sample from the boy, they found that he apparently had the genetic constitution of a girl. This is an unusual, but not extremely