What sex will it be? And why?

For millennia, pregnant women (and their partners) have wondered what sex the baby will be. Many parents wish for sons, especially as first-borns. Methods to achieve this have included tying off the left testicle, drinking lion's blood, or copulating under a full moon. None of these methods is now widely practised.

Births are usually accurately recorded, and it is almost always found that of 100 births, about 51-52 will be boys and 48-49 girls, on the average. Yet in spite of this apparent stability, there is variation. For instance, sex ratio (the proportion of boys at birth, SRB) varies (admittedly slightly) with mother's age, father's age, race and social class. More boys are born to young mothers, young fathers, White people and upper class people. So what causes all this variation? We must address this question because it suggests that there may really be effective methods of getting a son (other than sex-selective abortions in Wimpole Street).

At conception, the ovum bears an X-chromosome, while each available sperm carries an X- or a Y-chromosome. So the there are two sorts of foetus viz. XX (girl) or XY (boy). The conventional wisdom is that X- and Y-carrying sperms exist in equal numbers, and have equal chances of successfully fertilizing the ovum, and that therefore equal numbers of males and females are formed. I think there are two explanations for all the sex ratio variation described above – only one of which is consistent with this wisdom.

This is as follows. SRB is affected by male-sex-related foetal loss. When conditions are adverse during pregnancy, the foetus is at risk of miscarrying. Miscarriages occur more frequently to males than females. The upshot is that live births to older mothers, older fathers, Black and lower class parents all contain a slight statistical excess of girls because the boys in the cohorts have miscarried. The same is true of mothers who experienced stressors such as bereavement, recessions, terrorist attacks, or earthquakes. In the UK the SRB fell slightly after the death of Princess Diana: and it is low in Muslim women who observe Ramadan in early pregnancy.

A second mechanism that controls SRB is suggested by the accumulating data on the variation of offspring sex by the time of insemination within the fruitful cycle. Until recently such notions were dismissed as Old Wives' Tales. However, women can conceive on only about 6-7 days of each cycle, and it now seems that there is a higher chance of conceiving a girl in the middle of this fertile interval, and a boy at either end. Women's hormone levels vary across the cycle and it seems that these hormones may be responsible for some of the variation in SRB. One reason for taking this seriously is as follows. If sex of offspring were to depend on time of insemination, then it follows mathematically that sex of offspring would depend on frequency of intercourse, boys being associated with high frequencies. The evidence for such an idea is that during and just after World Wars 1 and 2, the SRB rose slightly in all the combatant countries, but not the non-combatant ones. Note that in both wars, servicemen were granted short home leaves before deployment to the battlefield, and later, to mark the Armistices. Readers may imagine what happened during

those leaves.

Further evidence suggests that fathers' hormones may also influence SRB. Sons are preferentially born to men with high testosterone levels e.g. who are dominant, and/or violent: and daughters to men exposed to endocrine disrupters that lower testosterone levels.

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Publication

Proximate causes of the variation of the human sex ratio at birth.
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Early Hum Dev. 2015 Dec