

Time to deliver

Early-morning births are genetically programmed

The small hours provided an evolutionary advantage



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THE notion that nothing good happens after midnight does not seem to apply to times of birth. Around the world the peak hours for vaginal births that have not been induced by drugs fall between 1am and 7am; the numbers then dwindle throughout the rest of the day. This has led many scientists to believe that giving birth during the early morning offers some sort of evolutionary advantage, perhaps gained long ago when hunter-gatherer mothers and their infants would benefit from having their group reunited during the small hours to help with care and to defend them against any predators.

The problem with this theory is that almost all the information on the timing of human births comes from modern, urban settings, such as clinics and hospitals, which could produce artificial conditions that skew the variation in timings. Not so, it turns out. As Carlye Chaney of Yale University shows in the *American Journal*

of *Physical Anthropology*, early-morning births are common to communities with both modern and traditional lifestyles.

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The mothers that Ms Chaney and her colleagues chose to study live in Formosa, a rural province in Argentina. They were divided into two groups that were considered to be both culturally and genetically distinct. One group consisted of 1,278 women from the Criollo population, a people of mixed Spanish and indigenous heritage who live relatively modern lives and typically engage in small-scale farming

and cattle-ranching. The second group was made up of 1,110 women who belonged to the Wichí and Toba/Qom populations, two of the traditionally nomadic hunter-gatherer peoples who also reside in the Formosa region. Because of Argentine health reforms in the 1980s, which encouraged—and sometimes forced—childbirth to take place in a formal medical setting, all the women in the study gave birth in the delivery room of a rural hospital that recorded the events. Ms Chaney included only full-term births and ignored all Caesarean sections, miscarriages, drug-induced and pre-term births.

If a modern way of life plays a part in favouring early-morning births, Ms Chaney speculated that she would see such timings dominate in the results for the Criollo women, but feature less prominently among the results for the Wichí and Toba/Qom. Not so. The data and additional analysis make it clear that there is no statistical difference in the average birth time found between the two groups. Both showed a surge in births between 2am and 3am, and a big trough around 5pm. More specifically, the average time of birth for the Criollo was 6.34am and that for the Wichí and Toba/Qom was 4.18am.

Ms Chaney believes that the mechanism driving the tendency for expectant mothers to give birth during the early morning is likely to be melatonin, a hormone which is known to increase at the onset of labour and is predominantly produced by the body between midnight and 5am. That mechanism may well have come about, Ms Chaney suspects, because it was advantageous to go into labour when most help was to hand. Today that means more work for the night shift.

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