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At the Dawn of the Post-Electronic Age

During the past two decades, most Western babies were born in an electronic environment. Obstetricians had arrived at the theory that if they could record the rhythm of the baby's heartbeat continuously during labour with electronic machines they would be in an ideal situation to rescue some babies in danger, should the need arise. They were convinced that this would be the way to make births safer. In fact, however, it was only a belief, not supported by scientific evidence.

Many recent events suggest that the electronic age of birthing might be drawing to a close. We are at a turning-point in the history of childbirth. A turning-point means a change of direction that can be pinpointed quite precisely. I believe the relevant date in this case was 12 December 1987, when an important article was published in the *Lancet*, one of the most authoritative medical journals in the world. This article compared eight studies conducted in Australia, the United States and Europe that had involved tens of thousands of births and had compared groups of women giving birth with electronic foetal monitoring with other groups of women giving birth with a midwife who merely listened intermittently to the baby's heartbeat. Several of these studies had been published previously in the most prestigious medical journals, such as

the *New England Journal of Medicine*; but the *Lancet* article brought all the various documents together for the first time. The overall conclusion reached was that the only statistically significant effect of electronic foetal-heart monitoring is to increase the rate of Caesareans and forceps deliveries. No significant difference could be shown between the two groups when comparing the number of babies alive at birth and the number of babies healthy at birth. The only possible interpretation of these findings must be that the use of electronic monitoring during labour is dangerous. It makes the birth more difficult. More babies need to be rescued by more operations. Thanks to the data vouchsafed by the most serious and orthodox medical literature, these facts are known everywhere in the world.[1] We now need to be fully aware of all its implications.

This means that the declining infant mortality rates for the period around birth (which became evident around the beginning of this century and continued during the past three decades) must be explained by reasons other than the routine use of continuous electronic monitoring. There is now no excuse for requiring all babies to be born in an electronic environment. More generally speaking, the time has come to consider the effects of the environment on the process of birth and the first contact between mother and baby. We must start raising new and simple questions and preparing ourselves for the post-electronic age.

For many doctors these findings are difficult to integrate with their beliefs and their style of practice. But for some midwives and women, and even for some doctors, the findings reported in the *Lancet* (and elsewhere) merely confirm what is

obvious. At the beginning of the 1970s I requested the purchase of an electronic foetal-heart monitoring machine in our hospital, thinking that, in some cases, the additional information it provided would help us to avoid unnecessary Caesareans. After a three-month trial period, Dominique – the most experienced midwife on our team – returned her verdict: 'This is just a device to increase the number of Caesareans.' If the need for privacy and the need not to feel observed and controlled had been better understood, the effects of continuous monitoring might have been foreseen and the electronic illusion avoided.

People who are studying in a medical school, or a conventional European midwifery school, are trained to answer certain questions. They are also trained to avoid certain other questions. But it is urgent to ask and answer these other questions now. What kind of environment can inhibit a woman in labour? What kind of environment can disturb the first contact between mother and baby, and the beginning of breastfeeding?

These are simple and new key questions that we are obliged to address during this period of transition. Let us translate them into medical jargon, or even into a topic for an examination question: 'What kinds of environmental factors inhibit human parturition?' Medical students have never had to reflect on this question in an exam. How would they be able to collect the appropriate data? The textbooks would not be of any help – at least the textbooks about humans. But medical students might take their inspiration from information gathered by scientists who have been studying the birth of other mammals; these scientists formulated the

question exactly as we have, and found some interesting answers.

The most significant studies were those carried out by Niles Newton in Chicago, who spent part of her career in the 1960s evaluating the effects of the environment on the birth of nonhuman mammals. She studied the birth of mice in particular and tried to analyse the environmental factors that make their deliveries longer, more difficult and more dangerous. Through her work we can learn the most efficient strategies to make birth more difficult. One might, for instance, place the labouring female in an unfamiliar environment – a place where the sights and smells are not what she is used to in her daily life. Or one might move the mother-to-be from one place to another during labour. Another experiment demonstrated that a transparent cage made of glass also tends to increase the difficulties. This scientific approach suggests that mammals prefer to hide themselves when giving birth to their offspring. They need privacy.

After studying the effects of environment on the birth of human babies for several decades, I am convinced that all Niles Newton's findings also apply to our species. Fortunately, I became aware of the importance of her work early enough to be able to understand a variety of human behaviours during the period surrounding birth. I have also borrowed some of her favourite phrases, such as 'foetus ejection reflex'. When I compare the works of scientists like her with what I have learned about the birth of humans, all my doubts vanish. We are mammals. We have to make up for the time lost through our obsession about differences between species. We should not feel ashamed to admit that other mammals can help us to

rediscover what some of us have forgotten. And one thing that human cultures in the West have forgotten, or want to forget, is the need for privacy of the woman giving birth and welcoming her baby.

It is not absolutely necessary to refer to the scientific experiments to be aware of mammals' need for privacy. In fact, this is a much observed and well-known feature of mammalian behaviour, both in those whose young are already relatively mature and autonomous at birth, like the bovines and sheep, and those who are not mature at all, like the rats. For example the pregnant sheep, normally a herd dweller, separates herself from the flock when birth becomes imminent. A female bighorn sheep will seek out the most inaccessible spot on the mountain and may stay there, isolated, for days without food and water while awaiting her newborn. The rhesus monkey moves away from her group to the edge of the forest and picks a well-camouflaged hiding place so that she may give birth alone, away from the curious eyes and unwanted attentions of other group members.

Even mammals that do not have the option of moving away from the group still try to isolate themselves. The rat – normally a nocturnal prowler – gives birth during the day; and the horse – normally a daytime grazer – gives birth during the night.

Why do mammals hide themselves, isolate themselves, to give birth? Why this universal need for privacy? Obviously, the aim is not to protect themselves against predators. If this were the priority, regrouping would occur. The females hide themselves to be protected against the other members of their own group. And why? That question is the reason for

this book, and is too important to be answered right away.

Let us return first to some practical considerations that are unique to our time. Is it possible to maintain an atmosphere of privacy in a maternity hospital? How might it be possible? These are basic questions for the advent of the post-electronic age.

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The Hospital of the Future

The birthing centres or maternity hospitals of the future will probably have very little in common with the obstetric departments of the electronic age. Of course, they will be attached to a hospital – in close proximity to a building where a medical team will be at the service of women and midwives, day and night, and ready to perform that wonderful operation called the Caesarean section, if it should suddenly become necessary.

A Caesarean section, performed with the current surgical techniques and the assistance of modern anaesthesia, represents the main advance in the field of childbirth in the twentieth century. This is the kind of advance worth preserving. It is a model, a reference for any other rescue operation. Any emergency surgical team should be able to do it, but it should not become the usual way to be born. It should not become an excuse for maintaining our ignorance of the physiological processes of birth.

How can we provide an atmosphere of privacy in a birthing centre or maternity hospital? Is it possible for mothers not to feel observed and controlled in such places? How can this be done?

Everyone knows that it is easier to have a feeling of privacy in a familiar place; this is common knowledge, even among

those who do not know about our mammalian nature and have not heard about experiments with mice! The prime aim should be to enable the mother-to-be to gain familiarity with the birthing place. She must be helped to feel at home. It is not enough to have had a guided tour of the facilities and to be told the whereabouts of the midwives' desk, the birthing room or the TV room. In order to become really familiar with a place you have to be there often and keep coming there to do something. And it is better still if you are doing something pleasant. In the future, all birth attendants who are concerned with giving priority to the need for privacy must think about the sorts of activities adapted to pregnant women that could be developed in a birthing centre. The important thing is to ask the questions. A variety of answers will be found according to the time, the premises, the kind of population being served, as well as the personality of the people in charge of the centre.

We found an answer that was perfectly adapted to our maternity hospital in Pithiviers, France. The pregnant women and the staff would meet and sing around the piano! What could be easier or more pleasant? It wasn't expensive. Somebody calculated that you can buy twelve secondhand pianos for the price of an electronic foetal monitor.

I could talk at length about those singing sessions. Singing can be looked on as a breathing exercise. In another context it can be considered as a fundamental human need — a cross-cultural need that becomes difficult to meet in our age of professional singers, of the media and the sophistication of recording techniques. Again, singing can be looked at from the point of view of the foetus whose vibratory sense is pre-

cociously mature and needs stimulation. Bearing in mind the popularity of singing in groups, let us remember that humans are social animals and that the social needs of pregnant women and young mothers are satisfied at all the wrong times in our society. Pregnant women and breastfeeding mothers are usually isolated at a time when they need strong social support; and women in labour are surrounded by three or four people at a time when they most need privacy.

So let us go back to the need for privacy. When we are in a place where we have shared not only ideas but also emotions, either by singing or dancing, we become attached to the place itself. The place, as well as the people, become familiar. In retrospect I find it difficult to imagine any activities better suited to changing the mental pictures we usually associate with the word *hospital*. Provided that all the members of the team – the midwives, nurses, doctors and secretaries – mingle with parents, babies, children and even grandparents, this approach always works.

Many details easily linked with the idea of privacy are important when giving birth. When a labouring woman arrives at the birthing centre or maternity hospital she should, ideally, immediately occupy the room that will be her territory in the hours up to and immediately following the birth. Just as Niles Newton's mice had a longer, more difficult and more dangerous labour when they were moved from one place to another, all midwives know that having to move a mother from a labour room to a separate delivery room often results in the delivery's being postponed. Modern women giving birth in any kind of birthing centre or hospital spend some time in at least three different places: first at home when the labour

starts; then in a car; and then, finally, in the building where the baby will be born.

In the United States, I have visited one maternity hospital where the birthing rooms had a lot in common with ours in Pithiviers, but – even better – there were enough of these rooms so that each woman could go immediately to one of them and stay there until the birth and even afterwards. Our *salle sauvage* in Pithiviers has often been depicted and imitated. In the mid-1970s it was absolutely new to design, in a state hospital, a birthing room where the dominant colours were brown or cream – and unheard of that the room should have no medical equipment, and no bed or table that would impose one particular labour position. There are some details about our homelike birthing place that I should have stressed more insistently in the past, but it was only when I had had experience of home birth that I understood their actual importance. It seems paradoxical to claim that only those with experience of home birth can design the hospitals of the future. In any case, I only became really aware of the importance of the size of the birthing room quite recently.

Once more, one must refer to the behaviour of other mammals, who usually try to find a small corner or a small intimate space where it is easier to feel private. At home it is tempting to prepare the place of birth and locate it in advance, if only to protect the carpets! But, quite often, the baby is born somewhere nobody had foreseen, and it is always in the smallest possible room – for example, a child's bedroom, or the bathroom. I have always wondered why taking a shower can seem more efficient than taking a bath; perhaps it is because the shower is usually tucked away in a tiny corner. A

woman once told me, 'My dream is to give birth in a cupboard.' Another couple had protected in advance the beautiful carpet covering the floor of their huge bedroom. At the last minute the mother-to-be rushed into a corner behind the piano, hung from a coat hook, and dropped her nine-pound baby on the only spot where the carpet was unprotected! In Italy I visited a birthing room that was an enlarged copy of the one in Pithiviers, but the atmosphere was totally different – much more awe inspiring and intimidating.

Is giving birth easier in a small room or a large one? This is the sort of new, simple and fruitful question that immediately comes up when humans are classified among the mammals. There is another detail that I now find much more important than I could have imagined in the past: there is a point at which a certain amount of disorder can reinforce an atmosphere of privacy. After visiting an obstetric unit, a midwife and I were trying to analyse why we had not felt at ease in the place. The reason was simple: everything was in perfect order. Few people noticed in Pithiviers that I used to make a discreet round of the facilities every day just to create a bit of disorder. At the time I was just following an unconscious intuition, but today I dare to talk about it openly. When I am called to a home birth and immediately feel at home, I now know why.

A small room, a small corner, a few things out of place – let us add another detail that would be completely unthinkable if your point of reference is a delivery room of the electronic age. Yet again, we are simply rediscovering what most mammals know instinctively: one does not feel so observed in the dark. Most female mammals try to find a dim corner to give birth to their offspring, and darkness may be even more important for

the birth of humans than for many other mammals. Nevertheless, even some home birth midwives who are very careful to disturb the birth as little as possible have a tendency to underestimate the importance of a dimmed light.

The birth process is a brain process. In labour and delivery, the primitive part of the brain that we share with all other mammals is active. This part of the brain must secrete the hormones necessary for efficient uterine contractions, but its functions can be inhibited just as they can be during all the other events of the sexual life. These inhibitions come from the new brain, the neocortex, which enables us to be rational, scientific and to communicate through language. The release of the hormones necessary for the birth process is accompanied by a reduction in the activity of the new brain; and that is why, at a certain stage of a normal physiological birth, women seem to divorce themselves from their surroundings and attendants and drift off to another planet. Their level of consciousness changes, as it must if they are to reach the right hormonal balance. On the other hand, you can stop the progress of labour by stimulating the neocortex and asking the mother-to-be something like 'What is your Social Security number?'

Light, too, is a well-known stimulus to the neocortex. This is well understood by those who explore the electric activity of the brain by electroencephalography. The sense of sight is the most intellectual of our senses. From this, one can deduce the special importance of darkness during human labour. Since human beings are characterized by the huge development of their neocortex – the part of the brain that inhibits the instinctive, involuntary processes – we can begin to under-

stand that darkness is probably even more important for the birth of humans than it is for the birth of other mammals. It is precisely this development of the neocortex that makes all instinctive human behaviour so fragile, so dependent on the environment. Of course, many people don't need a long explanation to convince them that closing the curtains tends to reinforce the feeling of privacy.

Making the place familiar, taking the size of the birthing room into account, being aware of the advantages of a certain amount of disorder and of darkness – it is easy to satisfy all these requirements. One just has to be aware of their importance. And any maternity hospital could be adapted to accommodate them overnight.

Of course, nurturing a long-term vision will bring up other questions. What suggestions should be made to the architects commissioned to design the maternity centres of the future? What sort of size should they be? Should there be a few huge centres welcoming thousands of babies a year, or very many small centres handling only a few hundred births a year? Will the current angular shapes of the buildings give way to more rounded lines? In this age of concrete, even birthing places are made of materials synthesized by man. Perhaps organic materials such as clay, wood or simply brick will be preferred – breathing materials, capable of transmitting humidity from inside to outside and vice versa. Perhaps people will be concerned about the electromagnetic environment, looking at the location of the centre in relation to a nearby electrified railway or high-voltage cables as well as considering the building materials and the geophysical situation.

The new generation of architects tends now to consider the

interaction of a building with both its environment and the people who work or live within it. Some modern buildings might be damaging to the personal health of their occupants, and we learn that this curse – the so-called sick building syndrome – might result from the rapid development of building material technology.

The important thing, as always, is to be asking the questions. The answers will follow.