The Cradle of Civilisation By Sue Gerhardt

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In order to develop a 'social brain', babies need loving one-to-one care

While wandering around the Radcliffe science library over the last few years, in search of the latest research on babies and how their brains develop, I had only one ambition: to translate esoteric, jargon-ridden papers into lucid prose so that their treasures could be understood by a much wider group of people. But now that this essentially solitary task is completed, and the book written, I realise how timely it is and how it might contribute to the debates on early care that have exploded on the pages of this newspaper.

What I discovered was that the attention that we receive as babies impacts on our brain structures. If we find ourselves cared for by people who love us, and who are highly sensitive to our unique personalities, the pleasure of those relationships will help to trigger the development of the "social brain". In the simplest terms, the pre-frontal cortex (and in particular its orbitofrontal area) plays a major role in managing our emotional lives: it picks up on social cues, the non-verbal messages that other people transmit, it enables us to empathise, as well as playing an important part in restraining our primitive emotional impulses.

Surprising as it may seem, we are not born with these capacities: this part of the brain develops almost entirely post-natally. Nor is it just a matter of waiting for your baby to develop an orbitofrontal cortex so it can begin to relate well to others. There is nothing automatic about it. Instead, the kind of brain that each baby develops is the brain that comes out of his or her experiences with other people. Love facilitates a massive burst of connections in this part of the brain between six and 12 months. Neglect at this time can greatly reduce the development of the pre-frontal cortex.

Early care also establishes the way we deal with stress. Babies rely on their carers to soothe distress and restore equilibrium. With responsive parents, the stress response, a complex chain of biochemical reactions, remains an emergency response. However, being with caregivers who convey hostility or resentment at a baby's needs, or who ignore their baby or leave him in a state of distress for longer than he can bear, will make a baby's stress response over-sensitive. Recent research by Marilyn Essex at the University of Wisconsin shows that children who lived with a depressed parent in infancy are more reactive to stress later in life; children who lived with a depressed parent later in childhood showed no such effect. This makes sense if we remember that the stress response is probably being "set" like a thermostat very early in life.

It also makes sense in evolutionary terms to have newborn brains which are unfinished, because they can be adapted to fit the needs of the social group.

In effect, they can be programmed to behave in ways that suit their community. However, it is a risky strategy. In a harsh environment, a baby's cries may be ignored, or he may be punished for being distressed. This is likely to produce an individual who becomes, in his turn, relatively insensitive and prone to aggression - and this could be useful in a tense, hostile community. Researchers have found clear links between harsh treatment in the first two years and later antisocial behaviour. But in our society, this endless transgenerational repetition of antisocial behaviour patterns is an obstacle to progress.

The account of current research that I have produced has given it, much to my surprise, a sudden relevance to two debates - on smacking and nurseries - triggered in recent weeks by government proposals. Looked at from this perspective, one can clearly see that smacking is damaging, and that the things that babies need most are not easy to come by in many nurseries: being held, and cuddled, having someone familiar and safe to notice how you feel, someone who can quickly put things right when they go wrong, someone who smiles at you lovingly. How many nursery nurses have the opportunity to provide such bounty? It is much more likely that babies in a nursery will find that they are not special to anyone in that way that parents believe their own children are, and they will have to wait for attention. One close observational study of a local authority nursery found that there was little or no eye contact, and little holding or comforting.

The research bears out the effects of such nurseries on babies. Babies can only cope with about 10 hours a week of daycare, before it may start to affect their emotional development, particularly if the care is of low quality. The strongest research findings are that full-time care during the first and second years is strongly linked to later behaviour problems. These are the children who are "mean" to others, who hit and blame other children. They are likely to be less cooperative and more intolerant of frustration. To me, these are all capacities which suggest poor development of the "social brain". Evidence that increasing the caregiver/baby ratio in nurseries does reduce problems of aggression confirms that these children have simply not had enough loving, individual attention.

These findings are not what working parents want to hear, nor what a government dedicated to getting single parents back to work wants to hear. Unfortunately, the most likely scenario for such single parents is the worst-case one: having to put their babies into poor quality, full-time nursery care before the age of six months. It is their children whose emotional and social development could be compromised - not those of better-off parents who can afford to work part-time or buy in the highest quality care. This is not a solution that benefits society in the long-term.

However, questioning the value of nurseries for babies unleashes such guilt among working mothers, and such a terror of returning to the days when women were expected to stay at home with their pre-school children, that

accusations of anti-feminism start to fly. But the science is there, demonstrating the vulnerability of a baby's neurobiology; and the social research is there, showing that full-time nurseries are bad for babies. How can we continue to deny it?

It is time to think clearly about what our new options might be. Most women don't want to return to an age of compulsory full-time motherhood and apple pie, especially given the stress and loneliness of being marooned at home with only a baby for company. (And what women want matters: a depressed parent is not good for babies either.)

On the other hand, we can't afford not to provide the kind of loving one-to-one nurturing that babies need, if we want to have a cooperative, socially skilled society. Most mothers and an increasing number of fathers want to be able to spend time with their babies, and often feel that they lose touch with their babies if they work full-time. In fact, research shows that they do often become less sensitive as parents, and this may contribute to a negative cycle where the relationship becomes strained under the demands of toddlerhood.

We have to come up with new flexible solutions, such as extended paid parental leave, that enable both parents to be involved with their baby while keeping the family economy afloat. We need to ensure that our nurseries are of the highest quality. We also need more community involvement to prevent early parenthood from being isolated and miserable. It is not "anti-feminist" to look for such solutions. By investing our time and money in the first two years of life, we will be repaid in greater social stability. And after all, what is two years in a working life of 50 years?

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