Caesarean Birth: Disrupting the Human Adaptive System. Insights for Prevention

Antonella Sansone, London, UK

Key words: pregnancy; childbirth; caesarean birth; human adaptive system; breastfeeding; bonding; maternal behaviour; beliefs; spirituality

A PSYCHONEUROSOCIAL ANALYSIS

In our Western work-centred societies, pregnancy and childbirth have lost their naturalness and become difficult, often a source of stress and depression rather than enjoyment. In a competitive world travelling at fast speed and full of endless demands it is so easy to forget about our true needs and wishes, inner voice and our health. The need for immediate gratification and fear of pain leave little space for listening, feeling and proactively facing difficulties. This is so evident in many modern career women who have become used to over controlling their work and every aspect of their lives, with the expectation that everything will follow as they intend. As a consequence they are scared by the unknown and fight against labour rather than letting go. Their anxiety/fear is likely to cause tightening of their pelvic floor, blood flow restriction, and birth complications. But labour is not like that. It is a natural force which a woman embodies yet whose power is beyond her self-control. It is about letting go of life forces, letting go of expectations and being present to let the process unfold. Pregnancy, childbirth and parenting are a dramatic challenge to a woman’s capacity to change with the flow of experience.

There is a lot of confusion which stems from fear and misunderstanding of the prenatal period and birth process. It all goes back to the mind-body split, an arbitrary division that current research has shown to be invalid (Candace, 1999). We have learned to distrust our bodies and our feelings, to place our trust in outer authorities instead of our endogenous resources or so-called ‘feminine’ qualities, weakening our ability to adjust to challenging circumstances. While this reflects a change in our culture, it is also a product of the materialist and medically-oriented
mind set which controls the birth industry in our modern world. The obsessive medical need to assess the risk ‘objectively’ and apply the health and safety rules, for instance through the use of sophisticated diagnostic processes, such as electronic foetal monitoring, is only one aspect.

According to Fred Previc, a former US government research scientist, the highly stressful, competitive environments characterising Western societies have impacted on the brain functioning by altering the brain’s neurotransmitters (Previc, 2009). The neurotransmitters are biochemicals helping different parts of the brain to connect and work synchronically. The basic mammalian brain encodes experience in the form of neural pathways which are activated with different intensity. Many areas of the brain, such as the amygdala, then respond to our perception of social events by triggering the release of neurotransmitters and hormones – biochemicals which Candace Pert has called the ‘molecules of emotion’. These molecules help cells to communicate with each other, and to transform information through the brain and to the body, activating breathing, heart rate, sweating and so on, to help us to react appropriately to circumstances. It is reasonable to assume that maternal cellular information crossing the placenta, by binding with the foetus’ receptors lying on his brain and body cells, affects his psychosomatic system. It is possible that the predominance of maternal feel-good hormones or stress hormones persistently binding with the foetus’ receptors determine the born child’s predisposition to be happy or depressed, thus to be healthy or develop illness, and even the outcome of labour.

According to Previc, when humans are continuously stressed, the level of calming neurotransmitter serotonin goes down, and the level of the motivational neurotransmitter dopamine tends to rise, including more self-driven behaviour. He believes that many of these effects are passed onto the foetus. When prospective mothers are persistently under stress, their babies’ brain biochemistry in the womb and in the period after birth can be affected. We can reasonably assume that the stress undermines a woman’s psychophysiological adaptive resources, thus her capacity to communicate with her baby – on cellular, emotional, spiritual level – which would minimise the need for high-tech interventions of the biomedical establishment.

An increasing number of women decide not to rely on the release of the natural love hormones to deliver babies and placentas and have elective caesarean. The caesarean rate has increased dramatically, giving Italy the second highest rate in the world and the highest in Europe. It has been estimated that approximately half the caesareans currently performed in the US are medically unnecessary, resulting in considerable avoidable maternal mortality and morbidity, and a cost of over 1 billion dollars each year. Women are not informed that a caesarean section has risks, such as the infant showing iatrogenic prematurity or respiratory disease. Maternal mortality is 2–4 times higher and morbidity is 5–10 times higher after a caesarean compared to vaginal birth. The advent of technology in childbirth has not produced any significant improvement in perinatal mortality rates, if anything,
has diminished the quality of mother-baby bonding, producing a negative impact on the health of the baby (Wagner, 2001; Beech, 1999).

The appearance in recent years of unprecedented developmental problems related to children should make us reflect about this phenomenon. Career women tend to have their first child biologically later in their lives, often with the help of technology, which increases the likelihood of multiple twins and consequent premature birth or caesarean delivery. Other mammals don’t have this problem, as they haven’t developed the newest part of the brain, the neocortex, responsible for our capacity to delay primal processes in order to pursue more self-driven objectives, and for having created our complex societies. Yet a human female needs her intellectual brain to work in neurological synchrony with her most primal animal deep brain.

Neuroscientist Jaak Panksepp writes that we can be quite certain that all mammals share many basic psychoneural processes because of the long evolutionary journey they have shared (Panksepp, 1998). He points out that it is our ancient animal heritage that contributes to make us the intense, feeling creatures that we are. And that, “As we come to understand the neural basis of animal emotions, we will be clarifying the primal sources of human evolution. Of course, because of our richer cortical potentials, the ancient emotional systems have a much vaster cognitive universe with which to interact”. Only a human can step out of her/himself and analyse what she is doing right and what she is doing wrong. A human mother can reflect upon her own emotions, thoughts, and experiences. She can reflect upon her reflections. This makes a human foetus more spun to her influences and less tied to genetics than another mammal foetus’ development. According to the new studies of epigenetics, these influences would modify genes and create predispositions. This also renders the mother-baby psychosomatic system more complex and more susceptible to complications. Prospective mothers as well as all professionals working with them need to acknowledge and value their animal nature and the adaptive function of emotions in childbirth. Reason, developed from our most recently evolved cortical brain, is not then, a quality that distinguishes us from other animals; rather it situates humankind on a continuum with them. Moreover, reason is not dissociated from our primal emotional systems but is continuously engaged with them.

THE PSYCHOPHYSIOLOGICAL SYNCHRONISM: A FUNDAMENTAL PROCESS THAT MEDIATES NATURAL BIRTH, BREASTFEEDING, MATERNAL BEHAVIOUR, AND BONDING

Caesarean birth, when medically truly unnecessary, like other types of medical technological interventions, is in this paper viewed as the labour process prejudiced by the woman’s lack of self-belief or trust in her intelligent psychosomatic network – in short, by her disconnection from the wholeness of her bodymind. While this is linked to our lifestyles – with an alarming rise of elective as well as
emergency caesarean births (Burak, 2012) – on the other hand it is a product of the changing culture of medicine, less sensitive to the subjective reality of the mother-baby synchronised psychophysiological system. The consequences of this can be dramatic, involving the human mother-baby co-adaptive system.

Evidence indicates that foetal monitoring may cause foetal distress and that it frequently gives false reading that can hasten ‘emergency’ caesarean sections and have no reliable statistical advantage in predicting true foetal distress (Prentice & Lind, 1987; Parer & King, 2000). The stress caused to the baby may prevent her from relying on maternal body cues necessary to help her progress in her own way. Medical staff needs to acknowledge that maternal nurturing emotions are fundamental sources of physiological, emotional and intellectual development of the unborn and born baby. They are also modulators of the mother-baby psychophysiological synchronised system. So they need to favour the productions of endorphins, which are the biochemical substrate of a stress-free state and deep calm, and by stopping the contractions induced by oxytocin, are responsible for the rhythm of labour and intermittence of pain. When the production of a cocktail of hormones (catecholamines, oxytocin and endorphins) is not rhythmic due to a permanent state of tension the process of labour slows down and may even freeze.

The mother-baby reciprocal behaviours – feeling and smelling the skin, searching for the nipple, cooing, stroking, hugging and looking – occurring straight after a natural birth – need to unfold undisturbed and be biologically regulated to nurture and protect the baby. The baby knows how to do this because she draws on an attuned communication system established during her intrauterine life and orienting her during birth and straight after. Caesarean birth, as an abrupt interruption of this continuum, would deprive the baby of the opportunity to draw on such a co-adaptive system.

Experiments with the body chemistry of female rats showed that the maternal instincts were dependent of the flow of a certain specific hormone (Nagasawa et al., 2012). Oxytocin, a feel-good biochemical released during labour and vaginal birth, mediates maternal behaviour, breastfeeding and bonding, and ensures that the baby becomes attached to a caregiver (Wagner, 2001). Oxytocin is the substance (peptide) that is released from the pituitary gland during childbirth to bind with receptors in the uterus, where it causes the uterine contractions that will eventually do the work of expelling the baby. In the brain, it acts to produce maternal behaviour, stop infanticide and seems to help some male rodents find long-term, monogamous relationships. This unifying functions of peptides, coordinating physiology, behaviour, and emotion towards what seems to be a coherent, meaningful end, is very characteristic of humans and animals. In a continuum, oxytocin is later also released by pleasurable touch and positive social interactions, and helps us to feel relaxed and at peace.

The high levels of endorphins produced during labour and the deep emotional experience induced by the pain stimulate the limbic system of the primary brain, which is responsible for the affective functions. Endorphins thus induce in the
mother a ‘sensitive state’ for the birth of her baby. They allow her to concentrate all her resources and senses on the birth, enabling her to welcome her baby. This kind of intimate, immediate, biological, indissoluble bond is more difficult in births with analgesia or caesarean, though maternal human mind can still be able to rely on other love resources. The same love hormones that help a woman's body open up and deliver her baby make a woman programmed to fall in love with her child. In the culminant moments of birth, when the baby is out and the stimulation of pain ceases, the levels of endorphins are so high in the woman’s body that she will experience intense feelings of ecstasy, which will favour her enjoyment of her baby and experience of motherhood.

Among the feeling-good hormones – a cocktail of love hormones – oxytocin also makes mothers more responsive to their babies’ cues or cry. Therefore the mother is primed to do these things for her baby by her own hormones and psychosomatic integration. A combination of hormones – the oxytocin released during labour and birth has an amnesic effect – and the exhilaration or bliss of a positive outcome of birth put the pain experienced by both mother and baby in a remote corner of their brain. After birth, the energy that had been concentrated in the genital area flows through the whole body, generating a feeling of gratification and well-being in the mother. These sensations, in turn, rapidly give place to feelings of tenderness and gratitude, which favours the mother’s welcoming of her baby in the first hours after birth.

Studies have showed that a woman's perception of her birth experience is likely to affect her psychological integration of it (Lipson & Tilden, 1980). This process may be prolonged and particularly difficult for caesarean mothers. The impaired sense of integration may hinder the earliest postnatal bonding and attachment. Certainly caesarean babies can still receive sensitive loving interactions. Yet we have to acknowledge that nature has equipped us with tools to receive these specific physiological rewards and build a mother-baby relationship on the base of a physiological synchronism, which guarantees the continuum of prenatal and perinatal period. The pleasure of having and taking care of a baby relates to the very experience of labour, which in turns relies on mother-baby synchronic communications during pregnancy. Though, adopted babies can still receive humane loving attentions.

SEEING THE PURPOSEFULNESS IN NATURE

The following is an excerpt from Ashley Montague’s book Touching. The Human Significance of the Skin, beautifully describing the mother-baby intimate attuned relationship when the baby is suckling at the mother’s breast and its origin in prenatal life.

The physiological benefits that mother and infant reciprocally confer upon each other during that interchange are so fundamental that there can be not the least doubt that they were designed to continue in this manner the symbiotic rela-
tionship they had maintained throughout pregnancy. All through pregnancy the mother has been elaborately prepared to minister to the dependent needs of her child from the moment it is born. Indeed, the nursing couple are in every way quite indispensable to each other, and indispensability that, in the Western world, is generally not understood by the very persons who have been elected the experts or authorities on the requirements of mother and child in childbirth and thereafter. It is as if there were a conspiracy against both mother and child to deprive them of their inalienable constitutional rights to human development (Montague, 1986, p.89).

In order for this mother-baby interchange to unfold, mother and baby need to be fully aware of each other after birth. The mother and baby’s full presence is biologically critical for each other. But mother’s concerns about the wound and the pain caused by the caesarean surgery are likely to prevent her from being fully present and let the psychophysiological synchrony unfold. Studies suggest that drugs given in analgesia can delay bonding with the baby, and the baby’s successful nursing (Sepkoski, 1985), and that infants whose mothers have had anaesthesia during delivery tend initially to be more sluggish and have less motor coordination (Bell et al., 2010). The stimulation of pain allows a woman to rely on its sensations in order to maintain the rhythm of labour and expel the baby without causing rupture of the perineum, which often happens when mothers have an epidural block. An epidural block also increases the rate of caesarean section. Therefore, the ‘through’ of pelvic muscles which normally rotates the baby into the proper position to move efficiently through the birth process dysfunctions. Mothers who experience a drug-free birth often comment that one of the most rewarding sensations of giving birth is the feeling of power as they ease their babies out into the world.

In an evolutionary view, the baby’s suffering during birth prepares him to cope with the difficulties she will encounter in his life outside the womb. The contractions of the uterus during labour stimulate a baby’s peripheral nervous system. This activates the child’s survival system and strengthens his adaptive skills in preparation for her emergence into the world (Sansone, 2013). The labour contractions are likely to be the most intense massage a baby will ever receive, which fosters her development. But the baby also experiences moments of intense sensual pleasure while passing down the birth canal, when she is pushed by the mother’s warm fluids and massaged by her muscles. I suggest that these alternating feelings of pain/fear and pleasure are designed to make the baby stronger and prepare him for the challenges of a new life. The moments of sensual pleasure provide the baby with a crucial physical contact, which makes the first mother-baby contact and breastfeeding straight after birth happen smoothly. Caesarean birth deprives the baby from this experience of muscle/skin stimulation, which, especially when extended in her postnatal life, is stored in his visceral memory and contributes to structure her personality.
The hormonal changes involved in pregnancy and motherhood seem to potentially make a woman’s brain sharper and more plastic and creative, unlike the amnesia associated to them (Christensen et al., 2010). In this way nature wisdom seems to equip a mother with the adaptive mental tool to biologically and psychologically communicate with and understand her baby during pregnancy, birth and beyond. Seeing these powerful resources boosted by pregnancy could minimise the risk of medical interventions, included caesarean birth.

Pregnant women and even women who have planned to conceive as well as maternity services staff and experts of infant mental health need to sympathetically see this purposefulness in nature and understand the delicate psychophysical adaptive processes during the pre and perinatal period. Awareness of this meaningfulness can render the whole experience of pregnancy and birth inspiring and fulfilling. This mental state of bliss and fulfilment equals with a high level of endorphins, feel-good biochemicals which add to and boost the cocktail of love hormones involved in pregnancy, a natural birth, and bonding. A woman’s awareness of having been the master of her pregnancy and birth outcome further enhances this beneficial state of maternal fulfilment.

The great teachers of the ancient East developed a philosophy called Kaizen, a Japanese word which means self-mastery, self-improvement, working hard (necessary in labour) to improve. They thought that when we have taken the time to build discipline, energy, power and optimism out of self-transformation, we can achieve what we want. Labour pain is an element of personal transformation. Going through physical and psychological pain creates fear and anxiety. To endure it for so many hours represents a huge challenge to a woman’s strength. As a consequence, all the woman’s emotional resources are mobilised. At the same time, old issues buried in her subconscious, might suddenly come to surface. It is when she feels that she cannot cope with the pain any longer that she becomes finally capable to abandon herself to the powerful energies flowing in her body. The woman goes over her limits and new inner resources are activated. This transformed personal strength resulting from the birth experience will enhance her self-esteem and equip the woman with the necessary qualities to be a sensitive responsive parent.

BELIEFS, SPIRITUALITY AND WISDOM

The isolation consequent to Western urban life, to a self-driven society based on competition and consumerism has deprived pregnancy and childbirth of the health benefits of beliefs, spirituality and wisdom. The biological effects of beliefs and spirituality have been widely studied by PhD cell biologist Bruce Lipton and neuroscientists (Lipton, 2007). Modern life styles tend not to leave space for meditation, for a mental conception of the child. Spirituality is about a deep search for meaning in our lives and makes our lives purposeful. It is a fundamental dimension in human existence, and vital in pregnancy to maintain health and produce a fully human being. Spiritual emptiness is a major cause of stress and a result of
modern technology and materialism. It is clear from some Asian and East African cultures how ritual and beliefs concerning the period preceding birth, even conception, saw the seeds for birth (Maidan & Farwell, 1997). For one East African tribe, the child is born the first time that she is thought in her mother’s mind (Hopkins, 1999). When a couple wishes to conceive a baby, the woman goes out into the bush and sits alone under a tree. Here she waits and listens until she hears the song of the child to whom she will give birth. Conception occurs, in the eyes of these people, at the moment that this song is heard and the soul of the child is visualised. Conception and birth are viewed as a celebration of life. These beliefs are inner cultural images of conception, pregnancy and birth, and sustain a woman’s trust in her bodymind resources.

These traditional beliefs show that mental representations enhance maternal consciousness of the child and can physiologically affect conception, pregnancy and birth. Research shows a link between health beliefs and healthcare in pregnancy and birth (Reading at al., 1982). If nowadays birth has become more problematic, this is partly because that wisdom which in the past was passed on, which sustained the pregnant mother’s confidence, have been replaced by unnecessary fears, ambivalent advice from Internet and books, and medical intervention. These can interfere with the natural process of birth, breastfeeding and bonding with the baby. It seems to me that we need to change meanings and metaphors versus a new culture leading to an awakening of consciousness and embodiment. We need to take repossession of the communicability of knowledge and wisdom, not merely through advice and tip, or individual therapy, but through shared personal experiences. We have dismissed the importance of human relations, forgetting that they impact on the state of our health. In traditional societies women pass their knowledge onto other women preparing them for pregnancy, birth and childcare.

I suggest that what prospective mothers, and fathers, need is an environmental provision adopting a Mindfulness Integrated Approach, which fosters their beliefs in themselves and enables them to use their valuable resources in childbirth and childcare. An important objective in the preparation for physiological birth is to offer them tools to contain the pain, so that it is reduced to its physiological minimum and not further amplified by fear, anxiety or medical intervention. These are requirements, and not experts’ often non empathic advice, of the woman’s ability to accomplish her evolutionary mission in order for the unborn baby and infant to thrive in his full potential. By teaching prospective parents the purposefulness of a synchronised mother-baby prenatal relationship and communication which governs pregnancy, baby development and natural birth, we prepare parents to empathically attune to the child’s ever-changing needs and states and establish a fulfilling postnatal bonding and attachment.
NEW METAPHORS: VERSUS A CULTURAL CHANGE AND KNOWLEDGE TRANSFER

An evolutionary perspective will allow us to question the collective male ideology based on work, competition, control, which women have identified with over the last few decades, at the expenses of their powerful so-called feminine qualities. It is as if women's female natures have been obliterated by their need to prove they are just as exacting and just as relentless as the men. One of my central points, often missed by the mainstream, is that by obtaining equality for women in the workplace – an important achievement indeed – we have robbed our unborn and born babies of one thing they most need: their parents' consciousness, attention, presence in each process of the prenatal and perinatal period. During this period an increasing number of doctors, many of them men, were trained, and the birth environment became more and more dominated by a male culture. I am in line with Michel Odent’s view that at the same time – during the second half of the twentieth century – many sophisticated electronic machines were introduced in the birth environment reinforcing the male symbols (Odent, 2009).

We urgently need the acquisition of a new culture enhancing prospective parents’ consciousness of their responsibility for their child's health through an understanding of the evolutionary significance of the processes of the prenatal and perinatal period. While we have to acknowledge the major achievement of considering a pregnant woman an active participant and not a passive incubator, as she was in the past, such awareness does still mainly concern experts of prenatal development. It has to reflect a broader cultural change. The government, educational institutes, birth institutions and maternity services staff should concentrate on the rights and quality of pregnancy and birth and of life of our babies – included the child's right for, protection of, the continuum of his prenatal and perinatal experience through a fulfilling birth. Which is not the woman's right to have a caesarean birth.

To empower women means to enhance the appreciation of the ‘feminine’ qualities, or most fundamental human qualities – of letting go, trusting their body – which is not passivity but female wisdom, integration of nature and nurture. In order for the whole labour biological process to unfold smoothly the intellectual control needs to weaken. The function of endorphins produced in labour is not only to reduce pain but also to induce, in the second part of dilation, an altered state of consciousness, similar to a hypnotic state. This state facilitates the inhibition of the cortical-rational part of the brain, allowing the primal brain and autonomic nervous system to take over. Moreover, it allows the woman to abandon her ego and her own limits, leading her to complete dilation and letting go of the baby, welcoming him with bliss.

These female values are best described by the Yin qualities of the Chinese Taoist philosophy, which counterbalance Yang: receptivity as opposed to activity, listening as opposed to discourse, being in contrast to doing, cooperation rather than
competition, connection and integration rather than analysis, expansion rather than self-conservation, and a greater attention to feeling and intuitive wisdom rather than reliability on rational knowledge and science (Capra, 1976). Our culture has consistently favoured Yang, or masculine values, over Yin or feminine. This one-sided development has now reached a highly alarming stage, a crisis of social, ecological, moral and spiritual values. Like any other aspect of our lives, pregnancy, birth and maternity and child care have been dramatically affected by this culture. Obstetricians and midwives are often too busy to listen and reflect upon themselves and others and understand the processes, and subjective realities of pregnancy and birth. The changing culture of medicine is becoming more responsive to the imperatives of business and technology, making a more sensitive and humane care increasingly difficult to find.

On the other hand, there is likely to be an economic advantage to a more humane medicine revaluing the so-called ‘feminine’ qualities: enhancing maternity care and high consideration of the mother and baby’s right of natural birth can save huge money – especially to the extent that it facilitates the unfolding of the mother-baby intelligent psychobiological fit, thus breastfeeding and the whole bonding process. This would help mothers recover more quickly from labour, ensure a child’s loving, relationship-oriented welcome to the world that allows for establishing future secure ties, thus preventing child developmental problems and society’s dis-functions. This can only be fostered by a change of medical and maternity care staff approach coupling with an appropriate prenatal and perinatal preparation for prospective parents.

A MINDFULNESS INTEGRATED APPROACH TO CHILDBIRTH AND PARENTING

The term meditation, in Sanskrit bhavana, means cultivation, bringing into being. ‘Mindfulness’ meditation, as introduced by psychologist-researcher Jon Kabat-Zinn, is based on the Eastern technique known in Buddhist tradition as Vipassana, in which you simply bring your attention to your breath and body, sitting or lying down, eyes open or closed. By breathing consciously in this way, you enter your bodymind system without judgements or opinion, releasing neurotransmitters from the brain to regulate breathing while creating an interactive flow among all systems. Mindfulness is the awareness – of thoughts, feelings and body sensations – that emerges when we pay deliberate and open-hearted attention to the moment-by-moment of the external and internal world (Williams et al., 2007).

Mindfulness-based approaches in health care began in the USA with psychologist Kabat-Zinn’s pioneering research into mindfulness-based stress reduction (MBSR), which proved being enormously beneficial for patients with chronic pain, hypertension and heart disease, as well as psychological problems such as anxiety and stress (Kabat-Zinn, 1990). A group of psychologists combined MBSR with cognitive therapy (MBCT) and found its positive effect on relapse rate of depres-
Caesarean Birth: Disrupting the Human Adaptive System. Insights for Prevention

At the same time MBSR was being used in antenatal classes for both parents, with the aim of preventing the negative impact that high stress and fear have on maternal and neonatal outcomes (Duncan & Bardacke, 2009a). A related approach using mindfulness for mothers has confirmed its potential to have a general positive impact on wellbeing, reducing anxiety, negative affect and stress (Vieten & Astin, 2008), which are often contributing factors in complicated birth, included premature births.

The potential benefits of mindfulness for pain suggested by research show that it can improve mental state and mood in people suffering from chronic pain by connecting with the present moment rather than being in the constant fear that pain is killing them. With this new awareness, they can accept pain and carry on daily activities. Pain associated to pregnancy and childbirth, often a consequence of maternal anxiety, concerns and stress – products of our Western modern culture – have similar challenges. Mindfulness aims to change a person’s relationship to the pain sensation as well as to the thought of it, so that the experience of pain is less likely to trigger a cascade of negative emotions, such as health concerns, that worsen the pain sensations and mental pain. Scientists have found connections in the brain between physical pain and emotional pain (Vastag, 2003), which means that by learning to master our thoughts about the physical sensations the whole experience becomes less all-absorbing and we can reach a level of freedom enabling us to re-engage with life.

According to Melzack it has been proved that in human beings pain is not simply a function of damage and that the intensity and quality of pain are conditioned by previous experiences and by the ability to understand the cause and meaning of pain (Melzack, 1965). The culture we grow has an essential role on how we feel pain and how we react to it. When I did a study on the perception of menstrual pain on a fishing island of the Maldives, my asking local women about the pain they experienced during their periods only induced puzzlement and laughers in them. They just didn’t understand what I meant. For them pain was part of a natural process, taken for granted and embodiedly accepted, far from being a problem to talk about – perceived physiologically at its minimum level.

If natural birth represents the very first challenge for a baby, in that it prepares him for life outside the womb, labour pain prepares the mother for the great existential event and the great challenge of motherhood. The conscious appreciation of labour pain may be understood as a signal and as a defence function requested by the woman for herself and for her child. Pain becomes therefore a valuable guide for warning both mother and baby of dangers. The emotional alarm, when on a moderate level, is meant to allow her to face the great event of childbirth and mothering. The total or partial suppression of labour pain or of the conscious contraction induced by synthetic painkillers should be seen in this perspective.

The self-training, or practice of mindfulness, is particularly useful in preparation for labour, birth and mothering. Prospective mothers will learn to see the adaptive function of labour pain, the physiological wisdom of pain and thus of
nature, and as a subjective emotion vital to the unfolding of labour contractions. When a pregnant woman learns that the conscious perception of the uterine contraction associated with pain is an expression of the maternal emotional charge needed to protect herself and her baby, she is enabled to accept it as an essential part of the labour process. This consciousness is likely to reduce her pain perception. Pain will not be perceived as an unknown monster but as an alley, “an expression of a psychobiological necessity”, as Professor Lucio Zichella of Rome states (Zichella, 2002).

Pregnant women who undergo mindfulness training report that they become aware of and learn to relate differently to the negative thoughts that worsen their intense physical sensations, they cease to be overwhelmed by feeling unable to cope with the pain, and less fearful of losing control (Duncan & Bardacke, 2009b). Mindfulness is particularly beneficial for childbirth preparation. Many labouring women report feelings of being overwhelmed by pain, fear of not being able to cope or of losing control. These feelings, if excessively overwhelming, may cause complications, caesarean sections, and premature births (Rich-Edwards & Grizard, 2005; Wadhwa et al., 2001). Whereas there are women who seem to manage their pain without ‘pain relief’ and have more positive, empowering experiences of childbirth than those who resist labour pain. Women having a ‘normal’ vaginal birth tend to describe their experience, ‘going with the flow’, ‘emotionally transformative’, ‘being present’ (Walsh, 2008; Walsh & Byrom, 2009). They perceive the pain as an alley to work with instead of an enemy.

Research on meditation engages with research on brain function. Scientists are exploring the potential influences of meditation and other such contemplative practices on mind, behaviour, brain function and health, thus on the bodymind system. This abundant evidence proves that mindfulness meditation is far away from a mystical experience, as often thought. Without being a long-term meditator, the practice of mindfulness or mindbody training can enhance wellbeing as it can induce both short- and long-term changes to the brain. Thus mindfulness is a way of being, a way of life that reveals the human wholeness that lies at the heart of our human being, even in time of great pain and suffering.

It seems that our contemporary Western lifestyles take us further and further from this kind of thinking and self-reflection. Our stressful life rarely leaves space for contemplation of our subjective reality and our human needs, of the human significance of our prenatal and perinatal lives, or for free imagination of what might be. Meditation aims at making us stop and familiarize ourselves with our human reality, our emotions. Through attention to sensations, we can train the mind to become conscious of bodily sensations and body processes, of its presence in the body. If proper attention is not given to the bodily sensations, than we are not going to the deepest level of the mind, as the mind is constantly in contact with bodily sensations and emotions. This process of consciousness has a physiological basis, and can affect pregnancy and childbirth, as it does our health in general. By enhancing attentiveness, mindfulness meditation can help in pregnancy, birth and
parenting to connect with the unborn baby and infant and communicate. In our culture, pain in childbirth is often unwanted, but it is a physiological necessity in labour. In fact, it mobilises the woman's resources and enables her to focus and be present, all qualities necessary to understand her baby. Therefore childbirth pain is fundamental in promoting health and bonding. Its suppression creates considerable complications. Most importantly, it deprives the woman of the chance for an important self-discovery experience, which is essential for mothering.

The quality of parent-child interaction – throughout pregnancy, straight after birth and beyond – depends on the adult's sense of 'being present', awareness of their baby's needs and experience and capacity to connect with the present moment. This attentiveness and sense of presence may prevent birth complications, caesarean sections and other kinds of intervention, and even premature births. Many studies have suggested that the early interactions between parents and their babies lay an important foundation for the child's later emotional, social and cognitive development (Stanley et al., 2004; Sansone, 2004). The moment-by-moment interactions require focus and connection with the baby, thus empathy, and are undermined by adult's preoccupation, anxiety, stress or depression, often a product of the demands of our work-centred society. Eastern mindfulness practice impressively engages with pregnancy, birth and parenting, as it encourages moment-to-moment contact with the flow of experience rather than constructs or concepts, which govern the West today. Nevertheless, while the West has mainly been concerned about pathology and cure, the East’s focus is on prevention and practice to pursue balance and health. And what better prevention than preparation for conception, pregnancy and birth to prevent childhood (and adulthood) illness and unhappiness?

In this regard, I quote the Humanistic Approach in psychology developing in 1950s, which focused more on the positive side of human nature. It seems to me a valuable approach in prenatal and perinatal psychology. In fact knowledge about our prenatal and perinatal life has to do with the deepest roots of our humanness, thus it allows us to understand more about ourselves as a whole and to help our children develop healthily and happy. The roots of this branch of psychology can be traced back to Eastern philosophy, adopted by Carl Rogers, who was not only one of its founders, but also one of the most influential therapists in the 20th century. Another notable figure is Abraham Maslow (Maslow, 1968). The humanistic approach encourages the development of positive resources of the personality like creativity, self-growth, self-development, and the realisation of the individual's own potential, all values necessary for a fulfilling and healthy pregnancy and birth. This makes it easier for them to look for positive ways to achieve their goals and find fulfilment. It makes prospective parents more in control of their lives and able to use their inner resources rather than medical intervention. This approach also considers the culture and environment around the individual and their contribution to their problem.
A woman’s aware connection with the present experience of pregnancy, thus with her embodiment, emotions and spirituality, is fundamental to establish emotional connection with her baby and is likely to prevent birth complications and elective caesarean sections. In the West we are bombarded by images, which offer virtual meanings and have separated us from our current experience and from our social/cultural as well as natural environment. We have lost attention to our experience.

**ENHANCING PROFESSIONAL AND INTERPERSONAL CONNECTION AND EMPATHY**

Through a mindfulness-based integrated approach, which secures a natural birth, we can protect the mother-baby human co-adaptive system, thus the flow of parent-baby’s earliest interactions. Research suggests that women who preferred a caesarean section were more likely to have experienced this type of birth previously and to have negative feelings about it (Gamble & Creedy, 2001). To decrease women’s preference for a caesarean section, practitioners should reduce the primary caesarean delivery rate and improve the quality of emotional care for women who require a caesarean section. Caregivers should engage in a sensitive discussion of the risks and benefits of various birth options, including a vaginal birth after caesarean, with women who have previously experienced a caesarean birth before they make decisions about mode of delivery in a subsequent pregnancy. If more and more women will conceive their first child biologically later, we have to enhance their fertility by preparing them through an inspiring integrated program focused on healthy nutrition, trust in their psychosomatic resources and meaningfulness. So that they don’t have to necessary rely on IVF, and face all the consequences of which they are often unaware. A mindfulness integrated approach to the mother and baby’s needs has also to acknowledge the utmost role of good maternal nutrition and freedom from pollutants to ensure a full-term pregnancy and positive outcome of birth. There is evidence that healthy nutrition, in particular omega-3 fatty acids contained in fish oil, can reduce prematurity, often associated with caesarean birth (House, 2000). Nutrition is obviously one factor interacting with others; yet by enabling a prospective mother to meet her and her baby’s nutritional needs from conception, we also contribute to foster her nurturing emotions, which sustain the baby’s life system. There is considerable evidence of the effects of nutrition on maternal mental state (Hibbeln, 2001).

I ponder that a mindfulness-based integrated program tackling the deep-rooted ignorance of the psychosomatic processes of the pre and perinatal period, thus including prenatal and perinatal psychology education for prospective parents and involving schools as well as university training courses could be the route to a cultural change and optimal maternity care. Therefore, mindfulness has to be integrated with the practice of psychology, psychotherapy, medicine and all professions with a concern for individual and public health/illness.
The work of Shapiro, Schwarts and Bonner demonstrates that mindfulness education can improve empathy (Shapiro et al., 1998). A study with medical students found that those receiving a MBSR (mindfulness-based stress reduction) program showed increases in empathy over time. These findings suggest the possibility, to be tested in future research, that mindfulness may enhance professional as well as interpersonal connection, which in turn supports interpersonal well-being. Of relevance also the unpublished findings (Jonas Kaplan, personal communication, October 2006) that self-rated reports of empathy were higher in those individuals with functional brain imaging scan revealing more mirror neuron activation in response to affective cues (Siegel, 2007). This may explain that enhanced resonance circuit function may be associated with empathy and the capacity to attune to others.

A mindfulness integrated pre- and perinatal program has not only a social and human impact but also a huge economic impact, since governments can save the extremely high costs of premature births, pre- and postnatal depression related to them, to unexpected caesarean delivery, difficult birth or poor maternity and baby care, and of infant/child mental issues.

REFERENCES
