

# Touch the Future

SPRING

OPTIMUM LEARNING RELATIONSHIPS FOR CHILDREN & ADULTS

2004

## Special Edition *Prenatal Exposure To Environmental Toxins & Lifelong Disease*

### *Connections*

Live Teleconferences

Beginning Saturday March 6<sup>th</sup>

*Joseph Chilton Pearce*

Accredited Online

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### *The Origins of Love and Violence*

A Public Awareness and  
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Joseph Chilton Pearce

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A survey of technological  
birth & its impact

Drop a frog in hot water and he will run for his life. Place the same frog in cold water, slowly turn up the heat, and he will sit complacently boiling to death. The Romans lined their wine jugs with lead, drank the wine, and were soon unable to notice the slow creep of lead poisoning. You and I, our children and their children, may be like the Romans, or worse still, the simmering frog.

The magnificent structures that form the human body and mind are not entirely hardwired by evolution. They are built by genes interacting with the environment. For the developing fetus the mother's body is that environment. Subtle changes affecting her body - stress, poor nutrition, toxins - cause the genes of her developing infant to adapt in ways that "hopefully" will ensure survival. As the environment grows more toxic, this struggle to adapt grows ever more challenging.

An emerging theory proposes that traces of toxins, well below danger for adults, can trigger fundamental changes in child development, changes that may not express for years.

Signals picked up from the mother's body, the quality of air she breaths, the water she drinks, her nutrition, stress and environmental toxins create references for her baby's primal adaptive system. *Primal Health*, a book by Michel Odent, MD, pioneer in childbirth and obstetrics, describes a critical period from conception through the traditional period of breastfeeding when the thresholds for this primal adaptive system are set.

Thousands of these mini-thermostats are needed to maintain health. Imagine setting even a few to the wrong setting at the very beginning of life. Could it be that the rising tide of environmental toxins is predisposing the developing fetus to health problems as adults - heart disease, diabetes, stroke, cancer, autism, schizophrenia, depression?

To this preconception and prenatal assault we must add the physical and emotional abuse routinely inflicted by hospital birth practices. We all have seen the show. A quick flash of dramatic cuts, sirens and lights, screaming mom strapped to the gurney being shot like a cannon ball into the "delivery" room.

For years Joseph Chilton Pearce and organizations like The Association of Pre- and Perinatal Psychology and Health have been protesting the routine use of highly invasive practices - unnecessary c-sections, for example.

In this special edition we look at the long term health issues of prenatal exposure to environmental toxins. To this we add Joseph Chilton Pearce's passionate review of the personal and cultural consequences of intellectual-technological interference in one of the most natural and sacred processes, the birth of a new human being.

The levels of toxic chemicals flowing in our blood, lungs and tissues are rising. Nero fiddled and cheered for his favorite Super Bowl team while Rome burned. And the frog? He stares enchanted at the television as the temperature slowly rises...

*Michael Mendizza*

*Improving the  
Adult-Child  
Relationship Using A  
Mythological Journey  
& Biofeedback*

At last a visually  
dynamic computer based  
learning tool that develops  
more than eye-thumb  
coordination.

*The Wild Divine Project*  
uses biofeedback to drive 3D  
computer imagery. The  
journey develops inner states  
that reduce stress and  
anxiety, enhance powers of  
creativity and intuition,  
increase relaxation and  
energy, and deepen mental  
and physical sensitivity.  
Michael Mendizza is  
consulting with designers to  
develop ways children and  
adults can use *The Wild  
Divine Journey* to eliminate  
conflict and improve commu-  
nication in the adult-child  
relationship.

Contact: Rob Geier  
rob@wilddivine.com

*We are moving*  
Please make a note  
of our new address

Touch the Future  
P.O. Box 1447  
Ojai, California, 93024

Conferences & Workshops Featuring  
*Michael Mendizza*

21<sup>st</sup> Annual Magical Years Conference  
on Parenting and Waldorf Education,  
Birth through Adolescence  
March 13-14 Waldorf Fair Oaks, CA  
**Meeting the Challenges Facing  
Children & Teens Today**

April 3-4 Waldorf Boulder, CO  
**Mothering & Fathering, Honoring  
Gender Differences in Parenting**  
Contact Rahima: info@informedfamilylife.org

April 16, Kelowna Waldorf School, BC  
**Media or Imagination, plus  
The Art of Playful Parenting**  
Contact: karen\_desjardins@telus.net

May 28-31, 8th Rethinking Education  
Conference, Irving, TX  
**Transcendent Mentoring the Next &  
Future Generations**  
The spiritual practice of parenting,  
coaching & mentoring in the Zone  
Contact: www.rethinkingeducation.com

June 8 Irvine, Science of Mind  
**The Science of Mind/Full Parenting**

June 9 Inside Edge, UC Irvine, CA  
**Magical Parent-Magical Child  
The Optimum Learning Relationship**  
Contact: www.insideedge.org

June 13-18, International Transpersonal  
Conference, Palm Springs, CA  
**A Transpersonal Model of  
Parenting & Education**  
Contact: www.itaconferences.org

October 8-31 Mendizza/Donaldson  
Book Tour, Germany  
**Playing by Heart and  
The Art of Playful Parenting**

Michael speaks on a wide range of issues,  
many of which are outlined in *Magical Parent-  
Magical Child, the Art of Joyful Parenting*.  
For information contact: info@tffuture.org

aTLC

*Bonding and Attachment  
Healing a Nation's Trauma*

The Alliance for Transforming the Lives  
of Children announces 2nd Annual Summit  
exploring the vital role of secure attachment  
and optimal brain development in preventing  
violence, addiction, and depression. April 29-  
May 2, 2004, in the Santa Cruz Mountains  
near San Jose, CA.

The Summit will be a unique, interactive,  
and inspirational gathering of a  
multidisciplinary group of helping  
professionals and other advocates for  
children's rights. The program explores the  
pivotal role of secure attachment and early  
brain development in optimizing children's  
wellbeing, and focuses on promoting bonding  
and attachment as cultural priorities in North  
America. Respected speakers such as Joseph  
Chilton Pearce and Suzanne Arms serve as  
springboards for participants to engage in  
conversation on questions of crucial  
importance to us all. You will be offered  
opportunities to dialog with pioneers on the  
forefront of this social movement, time for  
reflection and to ground and focus in a  
supportive and exhilarating environment.  
Networking in small groups or pods can help  
you build an ongoing support system in your  
geographic area or discipline. aTLC invites  
you to experience our nurturing community  
in this collaborative, life-affirming event.

For more information  
see www.atlc.org/summit

*Touch the Future  
Online Information  
Services*

We have created an easy way to keep your  
contact information up to date. Please do so  
at [www.tffuture.org/services/members](http://www.tffuture.org/services/members). Up-  
dating your email and mailing informatin will  
help us keep you informed of our projects,  
services and new innovations. Please visit  
our website and update your profile. It is  
very important. mm/tff

## Connections

Live Teleconference

Beginning Saturday March 6<sup>th</sup> with

*Joseph Chilton Pearce*

Touch the Future has a rich network of specialists in child and family development. *Connections* is a monthly telephone-conference that connects you with this network. One Saturday morning each month we schedule a live telephone conference with a special guest: Joseph Chilton Pearce, Carla Hannaford, Fred Donaldson, Jean Leidloff, Stuart Brown, Peggy O'Mara, Suzanne Arms, David Chamberlain, Bruce Lipton, to name just a few.

The format is simple, not unlike an interview on *New Dimensions* with listener participation. Questions submitted during registration will open a brief candid conversation with our special guest, setting the stage for an open forum with conference participants. We begin at 10:00AM, Saturday March 6<sup>th</sup> with Joseph Chilton Pearce. Tuition is \$22 plus normal telephone charges for the call. See [www.tfuture.org/classroom](http://www.tfuture.org/classroom) for more information and registration.

Accredited Online

## *Distant Learning Opportunities*

*Playing by Heart*, our second online class, began in January with Fred Donaldson, PhD., based on his Pulitzer nominated book. Michael Mendizza repeated his *Art of Playful Parenting* class based on his book *Magical Parent, Magical Child* with Joseph Chilton Pearce.

Our goal is to provide inspired accredited continuing education opportunities for child care providers, preschool, Head Start teachers and parents. The class format, six weeks, twelve lessons, is similar to online classes used by over 1,200 colleges and universities. Estimated time to complete each class is five hours per week, thirty hours total, which can be applied to continuing education certification offered by the Santa Barbara Graduate Institute.

And coming soon

### **The FUNctional Family with Elane V. Scott**

A rich collection of resources to help families meet the challenges of today's busy lifestyle.

### **The Awareness Project with Roger McKinley**

The Awareness Project provides resources for adults to be more aware and present in all aspects of their personal and professional lives, which includes, of course, their relationships with children.

See [www.tfuture.org/classroom](http://www.tfuture.org/classroom)

Touch the Future and The Institute of Humanistic Science

Present

## *The Origins of Love and Violence*

A Public Awareness and Education Campaign

A comprehensive CDROM containing the life work of James W. Prescott, PhD, provides the foundation for an emerging public awareness and early childhood education campaign. The campaign began by circulating the CDROM and print package to California Senator John Vasconcellos' Politics of Trust network. Why? Because political trust rests on a deeper foundation of "basic trust" which unfolds in early childhood. Understanding the Origins of Love and Violence in early childhood is a critical step in achieving the politics of trust, which is the legacy vision of Senator Vasconcellos. The next step is to distribute the same package to members of APPPAH, Association for Pre- & Perinatal Psychology and Health and to members of aTLC, Alliance for Transforming the Lives of Children. From this base the campaign will expand to national and international public health officials, educators and policy makers.

A baby's developing body and brain mirror and reflect, lifelong, the emotional-sensory environment provided by its first primary relationship, that is with its mother. The Origins of Love & Violence take root in this first, primary sensory environment. What we call "affectional bonding" or nurturing, or its absence—very early in life—structures the developing brain to interpret the world and its relationships as peaceful, pleasurable and loving or hostile, painful and violent depending on trust or anxiety experienced in this first relationship.

James W. Prescott is a developmental neuropsychologist and cross-cultural psychologist who received his doctorate from McGill University and whose academic programs focused on how the early environment shapes the developing brain and behavior. When he joined the newly formed National Institute of Child Health and Human Development (NICHD), he formed the Developmental Behavioral Biology Program and became its Health Scientist Administrator from 1966 to 1980. A major focus of this NICHD research program was to understand why depression and violence results from maternal-infant/child separations. The Origins of Love & Violence contains over forty minutes of rare video and hundreds of indexed publications documenting this research.

## *A Connection Between Prenatal Exposure and Lifelong Disease?*

*If prenatal exposures to environmental chemicals really do give rise to lifelong disease, it means that the present systems for medical care, public health, and environmental protection can never achieve their goals. This should be a profound wake-up call.*

*Excerpt From Environmental Research Foundation*

News and resources for environmental justice. Providing understandable scientific information about human health and the environment.  
www.rachel.org

A study published in the Journal of the American Medical Association (JAMA) revealed that attention deficit hyperactivity disorder (ADHD) has a real physical basis, and that the disease may well begin in the womb. F.X. Castellanos and colleagues found that children with ADHD have brains that are significantly smaller than the brains of children without ADHD. Furthermore, they concluded that the events initiating ADHD are likely to occur in the womb.

Lennart Hardell and his colleagues reported in *Environmental Health Perspectives* in June that there is a strong association between young men who get testicular cancer and the levels of long-lived organochlorine pesticides measurable in their mother's blood (but, importantly, not in the blood of the men themselves). Exposure in the womb seems crucial in the development of many testicular cancers.

In April, Linda Birnbaum and Suzanne Fenton reviewed a wide array of animal and human studies, concluding that exposure to hormone-disrupting chemicals in early development can cause cancer and/or increase sensitivity to cancer-causing agents later in life. They point out that the danger of prenatal exposures is firmly established in the medical literature, yet few human studies have made use of the information. For example, most breast cancer studies have measured chemicals in the blood of women at the time they were diagnosed with cancer—probably the wrong time to be looking for a connection between chemicals and cancer, Birnbaum and Fenton suggest.

The critical exposure likely occurred many years earlier. If you look for answers during the wrong time period, you will get wrong answers. (This important study is available in PDF at <http://www.rachel.org/library/getfile.cfm?ID=182>.)

In January, research in two New York City neighborhoods found a correlation between environmental contamination and babies born with low birth weight and small head circumference. Dr. Frederica Perera, the lead author of the study, told the *New York Times* that the results were particularly troubling because these birth outcomes are predictors of “poor health and mental problems later in life.”

If prenatal exposures to environmental chemicals really do give rise to lifelong disease, it means that the present systems for medical care, public health, and environmental protection can never achieve their goals. This should be a profound wake-up call.

If certain chronic diseases (some cancers, some immune disorders, and some diseases of the nervous system, for example)—many of which are increasing today — are caused by run-of-the-mill prenatal exposures, then people must be protected from exposure to disease-producing chemicals even before they are born. Present day public health systems are not remotely capable of achieving such a goal. This is a powerful argument against business as usual, an argument that is unlikely to fade any time soon.

## Theory Says

# Disease Tendencies Begin in Womb

Rob Stein

The Washington Post.

Washington, D.C., July 7, 2003

Near the end of World War II, Germany blockaded food to the largest cities in the Netherlands. Nearly two decades later, when boys born to women who were pregnant during the ensuing famine underwent military physicals, doctors noticed something puzzling: The young men were unusually prone to obesity.

That oddity would become one of the cornerstones of a theory of disease that has been gaining acceptance in recent years. A growing body of evidence suggests that poor nutrition, stress and other factors can affect a woman's developing fetus in subtle but fundamental ways, predisposing offspring to health problems as adults. These include heart disease, diabetes, stroke, cancer and even possibly psychiatric conditions such as schizophrenia, bipolar disorder and depression.

"When living things develop, and human beings are no exception, they are very sensitive to the environment. And that includes the environment inside the womb," said David Barker of the University of Southampton in England, a leading proponent of the "fetal origins of adult disease" hypothesis. "Structures and systems of the body are different according to the conditions during development."

The provocative theory goes far beyond the well-known health problems that underdeveloped premature babies suffer, the genetic diseases or frailties children can inherit and the physical and developmental disabilities infants can be born with when pregnant women drink, smoke, use drugs or take medicine dangerous to the fetus. According to the theory, babies born a normal size with no genetic defects or family history of disease and in otherwise good health can nevertheless be fated to future problems because of subtle changes triggered in the womb.

"When the fetus is at specific, critical points in development, different organs in the body — the pancreas, the brain — are more vulnerable than others to a stressful situation," said Kent Thornburg of the Oregon Health Sciences University.

"If they get too much of the stress hormone cortisol, or are malnourished, these organs will then undergo what we call programming. They will try to adjust in a way that will give them a survival advantage. But that modifies their gene expression for life in ways that may not in fact be advantageous."

The theory still has many skeptics, but it could help explain some of the most important public health problems, such as the epidemics of obesity in the United States and other parts of the world. It could also shed light on some of the most puzzling health mysteries, such as why immigrants and their descendants are more prone to heart disease, obesity, diabetes — and perhaps even some forms of mental illness — when they move from poor to rich nations.

"We always knew that nutrition was important for mothers. But it never dawned on us the magnitude of the importance," Thornburg said. "It means fetal development is really responsible for the health of our population. Population health has always been discussed in terms of what adults do as adults. Now we realize that what may be more important is what happens to you before you're born."

The evidence has come from studies around the world, ranging from following large numbers of people over long periods to link adult health with exposures in the womb, to detailed lab work demonstrating that the offspring of animals can be affected by feeding their mothers certain diets or exposing them to stressful conditions.

Based on these and other findings, some researchers suspect excess stress hormones and other nuances in female body chemistry may have an impact in the earliest stages of development, perhaps before a fertilized egg implants in the womb, or even when the eggs are still maturing.

"You actually have to worry about pre-pregnant women. If the hypothesis is true, then we need to be worrying about making sure adolescent girls are adequately nourished so they reach their genetic growth potential and are giving the right signals to their kids" when they become pregnant, said Aryeh D. Stein of Emory University.

*Cancer researchers suspect that exposure to unusually high or low levels of hormones or growth factors in the womb may affect the resulting child's subsequent risk for certain malignancies.*

*Karin Michels of Harvard Medical School found that women who were heavy at birth appear to have twice the usual risk of breast cancer as adults. "It's the opposite of the cardiovascular risk," she said. Similar evidence has been mounting for some psychiatric conditions. "We think it's quite plausible that events during pregnancy, along with genes, influence the development of the nervous system and the development of what later on will be mental illness."*

In some cases, it appears the changes can become a legacy that is passed on for generations. In the July issue of the American Heart Association's journal *Stroke*, Barker is publishing a study that suggests high rates of stroke that have plagued parts of England and the United States for decades may be the result of poverty in those regions generations ago.

If confirmed, the fetal origins idea could have profound implications, opening up broad new avenues of research and public health measures, such as wider use of nutritional supplements before and during pregnancy to reduce the toll from some of the most common chronic diseases. "The reason people are excited is because these prenatal conditions may be preventable," said Stephen Buka of the Harvard School of Public Health. "And by reducing them we may reduce the frequency of these devastating conditions."

The researchers are keenly aware that the theory could make women even more anxious about their future children's well-being, or prompt recriminations against women for endangering the health of their progeny. But proponents say the responsibility goes far beyond the behavior of individual women. Instead, it lies with prevailing conditions in society and environmental factors that are largely beyond women's control.

"When we're talking about the fetal origins of adult disease, there's a danger that we get into a blame game with women," said Matthew Gillman of Harvard Medical School. "We have to watch out for that." In some cases, the effects could be the result of a malfunction in the placenta, the tissue that provides sustenance to the fetus, that has nothing to do with what a woman does.

Skeptics, however, do question the theory on scientific grounds, saying there could be many other explanations for the associations that researchers have attributed to fetal programming.

"I'm not sure the associations are causal, and I'm not sure that even if they are they're important from a public health point of view," said Michael Kramer of McGill University in Canada. "It's a lot easier and sexier to study that than why kids are spending too much time in front of the television. But that's a lot more important."

Proponents argue that the evidence for the theory is strong and getting stronger, buttressed by rapidly accumulating animal research, large observational studies of people, the latest insights into subtle variations in how the same genes behave in different individuals and a deepening understanding of human development. More than 700 scientists from 43 countries gathered outside London in June for the second international meeting devoted to the theory. "We were able to answer the critics, of which there have been not a few," Barker said.

The strongest evidence is for heart disease. Barker's initial finding that people who are born small were much more likely to develop heart disease as adults has been confirmed by a number of later studies.

The exact mechanism remains unclear, but animal and human studies suggest that smaller babies experienced inadequate nutrition in the womb. As a result, their bodies developed in ways that would help them survive in a world where food is scarce.

“The mom early on signals to the fetus what the environment is really like.” “You’re going to grow up in a poor environment, so you’d better slow down your growth trajectory,” Stein said. “If the fetus is then born into a poor environment, then the kid is well adapted. But if the fetus ends up being born into a different environment, where food is abundant and work is sedentary, then this fetus will be maladapted and deposit fat too easily.”

Similar mechanisms could increase the risk for obesity and high blood pressure. It could also explain why rates of obesity and heart disease tend to skyrocket when people move from poor countries to rich ones.

“Their bodies are programmed to be very efficient with energy. They don’t seem to have the capacity to handle high-energy diets without storing a lot of fat,” Thornburg said. “The data is so overwhelming that there’s no doubt in my mind that this phenomenon is real and it’s important.”

For cancer, researchers suspect that exposure to unusually high or low levels of hormones or growth factors in the womb may affect the resulting child’s subsequent risk for certain malignancies.

Karin Michels of Harvard Medical School found that women who were heavy at birth appear to have twice the usual risk of breast cancer as adults. “It’s the opposite of the cardiovascular risk,” she said.

Similar evidence has been mounting for some psychiatric conditions. “We think it’s quite plausible that events during pregnancy, along with genes, influence the development of the nervous system and the development of what later on will be mental illness,” Buka said.

Babies born after difficult pregnancies and deliveries appear to be at greatest risk. Some evidence suggests the mother’s immune system, or exposure to infections, could affect the developing fetus’s brain, Buka said.

“The consensus in the field is that it’s not a specific infection itself but the mom’s immune system fighting off the infection that has adverse impacts on the child’s developing neurological system,” Buka said.

The immune system could also play a role in the increased risk of schizophrenia among some groups after they move to more industrialized societies. “Say you come from the Caribbean, where it’s warm, to cold raw England. Your body isn’t prepared to fight off all the new infections you’re suddenly exposed to. If you live in crowded, sneezy London, your contact with infections increases,” Buka said.

An assortment of research is underway or in the planning stages to validate the theory and tease out the causes and mechanisms.

The National Institutes of Health is planning the National Children’s Study, which would follow 100,000 children from the womb onward to determine which social, physical, environmental and other factors influence their health.

In another study already underway, known as Project Viva, Gillman and colleagues at Harvard are following more than 2,100 women who gave birth since 1999. Researchers collected a wide range of data about the women before their babies were born, including their diets, exercise and whether they were exposed to violence or other stressful events.

And Stein and his colleagues at Emory and Columbia University are starting a follow-up study to further examine the offspring of the “Dutch Hunger Winter” to try to determine exactly what aspects of the diet may be responsible. “This is cutting-edge research,” Michels said. “And it’s really only starting.”

Joseph Chilton Pearce

# *The Conflict of Interest Between Biological & Cultural Imperatives*

*A survey of technological birth & its impact*

Introduction by  
*Michael Mendizza*

In 1988 B. Jacobson, a Swedish researcher, found that the risk of eventual adult drug addiction was 5.6 times higher in adults whose mothers were given nitrous oxide for 4.5 hours as an anesthesia during that adult's birth. In 1990 Jacobson found a similar imprint in 200 opiate addicts whose mothers received barbiturates and opiates during their birth. If brief exposure to chemicals can cause ripple effects that last a lifetime, what about other traumas, insults or injuries during pregnancy, birth and bonding? Does the mother's attitude, emotional state and feelings leave lasting imprints on the developing baby? What about the drugs routinely given today for pain, to induce labor and c-sections? In the following essay *Joseph Chilton Pearce* raises these and other penetrating questions about the earliest, most sensitive, most impressionable and venerable stages of human development.

We cannot do to a living organism what we are now doing to the vast majority of human infants (and the ongoing spillover into the general abandonment and neglect of children taking place world-wide) without paying a dreadful price. The ruinous and hugely expensive take-over of all birthing by hospital-medical procedures has brought into play an equally huge and expensive cradle-to-grave therapeutic operation, undertaken in our efforts to repair the damage we are blindly causing at the same time.

Hospital-medical childbirth, now made sacrosanct and unquestioned on every hand, is a more insidious and devious danger than atomic bombs or germ warfare, since unrecognized and even *unrecognizable* by the public at large, for the demonic force it is. Taking away a woman's rights over her own reproductive process has been a disaster, but intervening in and all but abolishing the bonding of mother with infant at birth is a devastating crime against nature; perhaps the most criminal and destructive act on the planet today, and an ultimate, if slow but sure, instrument for species' suicide.

The backlash of entrenched medical-financial interests have brought a barrage of "pseudo-bonding" gestures now "allowed" in hospitals and highly advertised. None of these counterfeit substitutes or cosmetic gestures are bringing about the natural interaction nature intended, since they are after-the-fact additions to a mother-infant pair already damaged. Such maneuvers have, however, further strengthened the medical stranglehold.

Until we get medical-hospital interference out of birthing, and put birth back into the hands of women and the mother herself, as nature intended, we will continue to decline as a species. The statistics have been around for decades proving conclusively that home-birth is several hundred percent safer than hospital birth, under any circumstances. Certainly there are rare cases of "natural childbirth" when an emergency arises beyond the capacities of mother or midwife, and we have, thankfully, appropriate medical procedures to which we can turn. Holland used such a procedure for generations and had the lowest birth mortality rate of any nation, with some 96 percent of all infants delivered at home.

We must and can awaken the public at large to this issue, the means can be found. Surely the "collective cultural imperative" for medical intervention is enormous and powerful. And surely our entire culture promotes the medical myth through film, literature, the daily news, school, and on and on. There is an almost direct parallel with the issue of smoking in the latter half of the twentieth century. However, no organization has as yet really set about exposing the medical myth of birth and at least trying to awaken the general public to the outrage.

Surely the task at hand is daunting, enormous, and would require careful long-range planning, carefully organized strategies for undermining the medical myth and disempowerment of woman and creating a new image of birthing and womanhood. But we can't do this by pussy-footing around the issue, afraid we might offend.

Surely that medical myth is woven into every fiber of the social fabric, but that fabric is becoming our shroud - which we can and must unravel. Just as we can and must awaken in future mothers the ancient intelligence of the heart; de-condition her culturally imprinted self-doubt and fear; and restore in her the knowledge and power of *being* the mother of our race, with the courage to act accordingly. In undertaking such a restoration, we will unfold an ongoing educational agenda not only for survival, but for a higher, nobler, more compassionate way of life.

SOME UNEXPLORED ASPECTS OF THE CONFLICT

Pediatrician Maria Montessori once commented that humankind “abandoned in its earliest formative period becomes its own greatest threat to survival.” The following will show how surprisingly early and at times subtly, abandonment takes place. Nearly half century ago Muriel Beadle asked why is it that the human infant seems born into the world in a state of alert excitement that quickly reverts to distress followed by conscious withdrawal. (This withdrawal lasts for up to ten to twelve weeks on average, before full awareness resumes.) Answering Beadle’s query leads to a richly woven fabric of nature’s proposing and man’s disposing.

Paul MacLean, for many decades head of the Department of Brain Evolution and Behavior at the National Institutes of Health, wrote a paper on three fundamental needs critical to all mammalian life, particularly human, from the moment of birth. These three needs (each calling for voluminous description) can be stated, in their barest terms, as *audio-visual communication, nurturing, and play*. All three are interdependent, all are established and stabilized by mother-infant bonding at birth. Failure to establish this bond is a major form of abandonment, wherein all subsequent development (of both infant and mother) is compromised.

First, all mammals, on preparing to give birth, seek out the most hidden, preferably dark, quiet and safe haven available. At the first sign of any intrusion, of any sort - even the snapping of a twig - and the natural intelligence of the old mammalian brain, which controls birthing, signals that birthing procedures stop, and the mother wait for the coast to clear. We humans are mammals and our old mammalian brain’s instincts and intelligences are still right here in our head, and absolutely in charge of birthing, interpreting environmental signals, giving and initiating intelligent responses.

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In situations of complete safety, unquestioned support and security, fully in touch with herself and nature, a human mother can give birth in as little as twenty minutes - sum total of time from first signal to birth-passage accomplished. But at the first sign of any interference of any sort, regardless of the nature or reason for it, the birthing process will be disrupted, slowed down, or even halted, by very ancient and powerful intelligences within.

We are dealing with the effects of fear, the ancient startle-reflex and flight-fight-freeze reactions, which center attention-energy in the “reptilian” hind-brain and work against the higher intelligences that integrate and coordinate brain-mind-body. A mother’s enculturated fear of birth, and/or a negative birth environment with an air of emergency, crisis, suspense, acts precisely as does actual “attack” or external threat.

If disruption occurs or fear-anxiety is present, the smooth muscular coordination of resonant responses found in a mother “in the flow,” where thinking, feeling and acting are a single harmonious response,

is lost, and chaos generally reigns within her - muscle fighting with muscle, instinct with instinct, inner-knowing confused by well-wishing helpers, nature’s intentions clashing with culture’s attentions, mother and infant losing on all fronts - all of which is sadly the norm for the majority of modern women.

Nikos Tinbergen (Nobel laureate in ethology) studied the metabolism of the early infant and determined that a human newborn needs to feed about every twenty minutes in its early days, the periods slowly growing progressively longer as the months go by. Mother’s milk, it seems, has almost no fats and proteins, but is, instead, as Israeli doctors termed it, a rich cocktail of hormones, which rather thin-appearing diet requires that the infant feed quite frequently - which is the whole point. Some mammals, rabbits for instance, produce a milk so heavy with fats and proteins their offspring need only feed once or twice a day. This allows mother to leave the infant and forage to make more rich milk for that next powerful wallop. One might wonder why nature didn’t make a similarly handy arrangement for us humans; instead of a procedure so inconvenient, particularly to us modern people. Look a bit further, however, and we find that she did this on behalf of an intricately interwoven fabric of interdependent needs rather exclusively human and absolutely critical to being fully human.

First, the human newborn is unique in the mammalian world in that it produces no hydrochloric acid in its stomach. Hydrochloric acid is necessary for the digestion of fats and proteins, found abundantly in all mammal's milk except that of human mothers. Some *nine months after birth*, however, hydrochloric acid spontaneously appears. Remember this nine-month marker in the exploration that follows here.

Just as it took nature nine months to grow that infant in mother's womb in the first place, it takes another nine months "in arms" to firmly establish that infant in the matrix of its new world. In regard to MacLean's Triad, consider that hearing develops very early in utero, and language learning itself begins late in the second trimester as ongoing muscular responses the infant makes to phonemes, those foundational units of language (if the infant has normal hearing, and a speaking mother). Vision, however, while it occupies more of our brain than all other senses put together, obviously can't develop in utero, even though visual sensitivity appears early on, as seen in an infant's aversion to bright lights should we shine them directly on the mother's belly (which prompts the infant to turn its head away). Visual development, though, and the audio-visual communication that accompanies it, must await birth to unfold. (There is a vast difference between stimuli and communication.)

And at birth, if given a face within six to twelve inches away, two immediate responses take place in the newborn: its initial excited alertness (noted by Muriel Beadle long ago) stabilizes and does not fade, and visual - and audio-visual - development immediately begins. That close-up face literally turns on the infant brain and keeps it turned on, for the infant is born with a preset neural pattern for cognizing-perceiving a face, but only a face. That new visual system doesn't respond to other visual objects, while the infant will lock eyes on a face, if one is given at that required distance, and hold that focus.

Then awareness and perception-cognition automatically takes place, which, in turn, activates the infant's entire body-brain system. Focus is immediate so long as a face is there to focus on; parallax (muscle coordination of the eyes) forms within minutes (so the infant can even follow that face around should it move about) and a "construction of knowledge" of a visual world begins - a world based on this stable foundation of a face, a "known" to which all unknown perceptual phenomena will then be related.

Before long other objects in the mother's immediate vicinity are registered, and, through processes of neural association, corresponding new neural patterns form, and a cognitive field of re-cognizable objects grows exponentially (as does the brain itself) - so long as that face-pattern remains the stable point of reference. Although any face will work at birth (even a false face for a brief time), face constancy and all that goes with it, is the critical factor in this early infant movement from known to unknown, and vitally necessary for a stable and stress free development.

Should a face not be presented, along with all the attendant functions accompanying it (to be described shortly), conscious awareness will fade within about 45 minutes, and does not ordinarily reappear, as mentioned above, for upwards of some ten to twelve weeks on average. The reason is that bonding as a reciprocal function between mother and infant is then fragmented, and the ongoing nurturing instincts which bonding awakens and locks into the *mother's responses* aren't there. Most infants then receive only sporadic exposures to a face or faces and, by then, consciousness largely retreated, the awareness needed for such cognition to take place and be stabilized is missing. Nature will compensate as best she can, but under these conditions, her capacity to compensate is diminished and slow.

*The backlash of entrenched medical-financial interests have brought a barrage of "pseudo-bonding" gestures now "allowed" in hospitals and highly advertised. None of these counterfeit substitutes or cosmetic gestures are bringing about the natural interaction nature intended, since they are after-the-fact additions to a mother-infant pair already damaged. Such maneuvers have, however, further strengthened the medical stranglehold.*

Nature arranged that this magical face-trigger be some six to twelve inches from those equally wonderful mammary glands from which flow that life-giving fat-and-protein free nurturing-nourishment. Frequent nursing assures a frequent reinforcing of the stable face pattern on which vision and awareness is based. "Object constancy," as Piaget called it, the stabilization of an object-world of vision, occurs around the *ninth month* of this busy construction period. Among the many facets of this ninth-month milestone, myelination of the neural networks of this primary visual world takes place, making the neural foundations of vision permanent, no longer "labor intensive" but "cheap to operate," the ongoing expansion of the visual world automatic and effortless. Now nature can turn her world-building energy to other developments, which open around that pivotal ninth month after birth.

Any society separating mothers from infants at birth will have a disproportionately large population with impaired vision. The United States, for instance, is virtually a nation of eyeglasses. (We ignore and/or forget research that shows that preliterate people have far more accurate and extensive vision than we have - some of those people can see the rings of Saturn with their naked eye.) Far more seriously, for those willing to look, note how many of

the infant-toddlers we see, pushed about in various wheeled devices that keep them separate, out of the way and helpless, have strangely vacant, barely focused eyes, and vapid, nobody-at-home expressions - as though a light were blown out within.

Some forty years ago Whittlestone, at The University of Adelaide, pointed out that the mother's heart is a most critical factor from conception through birth. Now we know that her heart is every bit as critical a part of the next nine-months "in-arms" and a major reason for nature's programming such an "in-arms" period. Over half-century ago researchers had found that a heart cell could be removed from a live rodent's heart, put in an appropriate nutrient bath to keep it alive, and, when examined through a microscope, was seen to continue to pulsate, expanding and contracting regularly, according to the rhythm set by the donor-heart. After some time of this separation from the heart, however, the cell's rhythmic pulsation would deteriorate until collapse, and that erratic jerky spasm called fibrillation, precursor to death of the cell, would set in.

*So at birth, following separation, infant and mother's heart must be brought into immediate proximity, wherein they confirm their uterine resonance and re-stabilize each other or "lift each other" into their familiar, stabilized order.*

If two heart cells were placed on the slide, however, separated from each other, when fibrillation began, through bringing the two cells into close proximity with each other (they did not have to touch and could be separated by a tiny barrier) they both stopped their death-spasms and reestablished their coordinated pulsation, in sync with each other. Each cell had "lifted the other" out of that fibrillation that leads to death into the shared rhythm of life.

This miracle occurs, it turns out, through bringing into spatial conjunction the electromagnetic fields that arise from and surround each heart cell, a phenomenon only recently discovered. These electromagnetic (EM) fields are not affected by or limited by physical boundaries of skin and are measurable

several feet away from the heart. When the fields of two people come near to each other, they interact. Their waveforms go into the same coherent pattern (and coherent wave-forms reinforce each other). This coherent resonance, in turn, lifts those cells out of chaos into order. Cells and their EM fields mutually give rise to and/or influence each other, and the same phenomenon occurs, on a far larger and far more serious level, with infant-mother hearts at birth, a major but largely unrecognized factor in bonding.

The heart itself produces a very powerful EM field, at three successive levels: the first and most powerful surrounds the person's body, flooding every cell and neuron of that body; the second extends out some three feet in all directions and interacts with other heart fields within that proximity, a principle ingredient of emotion and interpersonal relationships; the third extends out indefinitely, for all purposes "universally" (possibly a factor or aspect of the human spirit).

So at birth, following separation, infant and mother's heart must be brought into immediate proximity, wherein they confirm their uterine resonance and re-stabilize each other or "lift each other" into their familiar, stabilized order.

This order must be continually reinforced through that warm proximity for about a nine-month period. By that time the infant heart has matured enough to "stand on its own" without so frequent a stabilization by mother's heart. Thus here we have another ninth-month milestone marker.

Before leaving this issue, consider the fact that sperm and egg can be introduced in a test-tube (a deadly dull affair) which may (with sufficient sperm in support?) result in their union. This shotgun coupling is followed by two or three cellular divisions of that egg, as triggered by genetic coding, but no more.

Cell division will *not* continue after those first few gestures toward life, regardless of type of medium, temperature at which the fluid is kept and so on (variations of which have been tried over the years). Thus no actual “test-tube” baby has ever taken place and never will. The term is itself a myth-making misnomer (reinforcing the mechanization-myth science has woven around genetics and medicine around conception and gestation), since, following that test-tube insemination, the DNA of that newly formed genetic system must be placed within the immediate electromagnetic radiations of a mother’s heart. These are found, conveniently, in her womb, where by odd coincidence, in addition to the rich sea of EM energy with which mother’s heart floods that area, nature provides an equally rich sea of nutrients and just the right temperature for ongoing cell division to take place.

DNA is not only both environmentally and electromagnetically sensitive and responsive, it is critically dependent on these signals for the unfolding of nature’s blueprint for new life. Without the appropriate nurturing environment of womb and heart, gestation can’t take place. So, once cell division begins in that test-tube arrangement, that dividing cell must be planted in a mother’s womb or frozen for some hypothetical future planting, and quickly.

So at birth, an immediate return to the mother’s heart-field must be given, or severe infant distress sets in, followed by eventual withdrawal of awareness and alertness. (Forty-five minutes seems about the average “window” of opportunity for establishing the infant-mother relation needed, a relation centered on that heart-field link.) Again, that six-to-twelve inch distance of the mother’s face, giving immediate proximity to those nurturing breasts, vital to the ongoing awakening experience of the newborn, assures a return to and ongoing stabilization of the infant’s heart given by the mother’s heart, to which resonance the infant has imprinted on a cellular level from conception.

Newborns and mothers wired up for heart and brain wave recordings (electrocardiograms and electroencephalograms) show coherency and entrainment (matching of the wave frequencies) when infant and mother are together. Both systems become incoherent (chaotic) if prolonged separation takes place, whereupon cortisol is released by both mother and child systems and general stress takes place in both. Remember our two heart cells on that microscope’s slide, and remember that excess cortisol is quite toxic to neural systems, particularly new ones.

Remember also that any society interfering with natural bonding at birth will have a corresponding increase of heart trouble. When primary heart connections fail to take place, heart development in the infant is immediately compromised, and a “wounded heart” trauma takes place in the mother, whether she is aware of it or not. The “post-partum-depression” that often follows birth-separation can be a devastating experience, affecting the health of both parties thereafter.

Years ago biologist-anthropologist Ashley Montagu wrote a now classic work called Touching, and recently Mariana Caplan wrote a similar work now called To Touch is to Live. Both are well documented studies showing the critical necessity of infant skin-stimulus at birth. For at birth, the newborn’s nervous system is quite undeveloped since the millions of sensory nerve endings distributed over the body can’t be activated or developed in utero. In that water world the infant’s body is protected by a “water-proof” coating of a fatty substance called vernix caseous, which insulates that myriad of nerve endings. So at birth all mammalian mothers vigorously lick their infants for many hours, and sporadically for days thereafter. This is to activate the dormant sensory nerve endings and the peripheral nervous system, which is, of course, a primary extension of the brain.

*Mothers separated from their infants at birth obviously can’t provide this touch-stimulus, nor are they stimulated to do so later if the separation is prolonged. Mother, too, has a critical “window of opportunity” for activating those ancient nurturing responses, considered by Paul MacLean to be our “species survival instincts.” These instincts are activated by her skin-to-skin contact with her infant, making bonding a reciprocal dynamic of awaking and discovery.*

Failure to activate these nerve endings results in a desensitization affecting the reticular activating system of the old brain, where all sensory stimuli is collated or organized into those resonant patterns which are then sent on to higher cortical areas of the brain for world-making and experiencing. Touch deprivation results in a compromised and diminished overall neural growth, sensory system and general conscious awareness in the infant, as well as affecting inner ear development, balance, spatial patterning and so on, later.

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Language learning, as mentioned, begins late in the second trimester as muscular responses the infant makes to the phonetic content of the mother's speech. This dynamic continues after birth, if the appropriate model-stimulus is provided - a speaking mother in close proximity. The newborn then remains open to phonetic systems in general and will respond to new phonemes with corresponding new muscular patterns, until some *nine months* after birth, at which time the basic phonetic-muscular system myelinates, becomes permanent, and phonetic openness closes to the boundaries of the mother's speech.

During that initial nine-months of continued language learning and phonetic completion, speech preparation takes place. Speech is a dramatically different neural-muscular operation than the earlier body-language dynamic, yet subject to the same model-imperative. From the moment of birth, given that face pattern to organize vision around, the infant responds to the mother's facial and neck muscle movements made when she speaks, by making corresponding muscular movements in synchrony with hers, though in a less "robust" manner. (There is, for example, the well-known and certainly robust response of the infant sticking out its tongue if the caretaker sticks out hers.) These mimetic responses, which mirror facial and neck muscular movements of mother's speech, automatically connect the infant's audio and visual worlds, through pairing her word usage with the overall phonetic-muscular patterns of his body.

*A group of medical men in Israel, disturbed over their own country's birth procedures, and the inability to breastfeed most mothers then exhibited, pointed out that any society eliminating breast feeding has an immediate, one-for-one corresponding increase of breast cancer.*

Thus this primary audio-visual communication prepares for speech (which involves coordinating over 200 fine-tuned and some very delicate facial-neck muscles). Around the ninth month after birth the average infant's speech preparations have led into "lalling" or infant-babbling and even the first words - if, and only if, the appropriate model-signal-stimuli are provided in that critical second-matrix period, a provision made by simply nursing the infant and speaking.

Infants separated from their mothers and confined to various forms of ongoing separation thereafter (as most modern infants are - through cribs, bassinets, carriages, playpens, strollers, etc. or that most immediate and thorough devastation called day-care, are denied all these responses, and their development is correspondingly compromised. Nature will compensate as best she can - but compensation is always a poor substitute for natural, spontaneous mimetic growth. We live in a compensated society, however, where the abnormal has been sustained until it has become the norm - we citizen-victims none the wiser.)

A note in regard to breast-feeding: a few years back a group of medical men in Israel, disturbed over their own country's birth procedures, and the inability to breastfeed most mothers then exhibited, pointed out that any society eliminating breast feeding has an immediate, one-for-one corresponding increase of breast cancer. These findings were not published in the US, where an estimated 97% of all breastfeeding had been eliminated during the twentieth century, since our powerful medical groups simply block such reports. At a recent (2003) workshop I gave in up-state New York, a woman oncologist reported that her medical group had found just such a correspondence in their women.

Finally (in this brief survey), but perhaps the most important of all these ninth-month-markers, we come to the prefrontal cortex, a major neural system that cannot unfold in utero (except in a most rudimentary form) and must await birth to begin its full cellular growth. If conditions are right, this fourth brain will develop into the largest neural lobe. The primary phase of prefrontal growth takes place during the in-arms and early crawling period, and is completed in that significant ninth month. A second prefrontal growth spurt, equally "experience dependent," is designed to begin at mid-adolescence. This later prefrontal growth-spurt is critically dependent on the successful completion of the first one that occurred years before, and is intimately linked with a corresponding growth spurt in the cerebellum.

*We cannot do to a living organism what we are now doing to the vast majority of human infants, and the ongoing spillover into the general abandonment and neglect of children taking place world-wide, without paying a dreadful price. The ruinous and hugely expensive take-over of all birthing by hospital-medical procedures has brought into play an equally huge and expensive cradle-to-grave therapeutic operation, undertaken in our efforts to repair the damage we are blindly causing at the same time.*

Since the mid 1980's the prefrontal cortex has been the subject of intense investigation but already is recognized as the latest evolutionary neural system to develop (it is probably less than 50,000 years old, compared to millions, up to hundreds of millions, of years behind the older lobes and modules of our brain). This latest and greatest of nature's neural achievements proves to be the "executive brain," able to moderate and control all responses, reactions, and instincts of those older "animal brains," with their sensory-motor, defensive, sexual and instinct-bound patterns, as well as the "neo-cortex" giving us speech and a vastly higher intellect. Only this newest prefrontal system can organize the entire brain into a smoothly synchronous attention or intention, link all our "lower instincts," as well as thinking-feeling, with higher fields of intelligence, and translate all the "higher human attributes" such as love, empathy, care, and creativity, into daily action. The prefrontal cortex, which Patricia Goldman Rakic calls the "governor" of the brain, gives us what Elkhonon Goldberg rightly calls "civilized mind," if developed.

But, as Allan Schore's research makes clear, the genetic structure of the prefrontal cortex proves to be the most "experience-dependent" of all brain systems, that is, those genetic systems are critically dependent on appropriate environmental feedback. This feedback is given through the multi-leveled functions of infant-mother bonding and ongoing in-arms relations, and the overall positive emotional environment that should result. It includes nurturing through breastfeeding, sufficient movement and sensory stimuli, immediate proximity to the mother's face and heart, language and speech stimuli, and so on. Failure to provide this overall emotional support inevitably means a compromised prefrontal cortex, which literally cannot grow sufficient cellular structures and make the necessary neural connections with the rest of the brain for full operation.

And a compromised prefrontal cortex results in an impaired "emotional intelligence," a corresponding difficulty in relating with others or controlling our ancient sexual-survival reflexes, with a corresponding tendency toward apathy, hopelessness, despair, and/or any of the many forms of violence.

Just as it took nature nine months to grow the basic "triune brain" that unfolded in utero, this prefrontal growth takes the nine months following birth, with all the attendant developments which center around the heart. Thus all these strands, briefly sketched in the above, gather to completion around this ninth month milestone. Then, if these foundations are in place and functional, from the ninth to twelfth month another major neural structure grows to connect this new evolutionary "executive brain" with the ancient limbic or emotional brain, which older system has direct unmediated neural connections with the heart (through the ancient amygdala which is as much the top part of the defensive "hind-brain" as lowest part of the emotional brain.) Thus this "orbito-frontal loop," as its called, this huge bridge between old and new, proves to be, as Schore's research clearly shows, the most decisive factor of our life and is, again, critically experience dependent. If emotional nurturing is lacking, this bridge will be compromised and/or the little development made will be largely deconstructed, re-routing the emotional brain's portion of the orbito-frontal loop back into the defensive "hind-brain" system. (But that is part of a survey of the third ninth-month cycle, the toddler period.)

At this ninth-month point, when the orbito-frontal loop begins its massive growth, the ancient cerebellum, in the back of the brain, undergoes a corresponding growth spurt. The cerebellum, rudimentary until this time since it is only sparsely needed, is involved in all speech, walking, coordination of muscular systems and much more.

This muscle coordination takes place through the muscle spindle system, those tiny neural extensions found on each striation of muscle tissue throughout the body, which played a major role in the uterine infant's physical response to those phonemes underlying language, literally "embedding" language in the body. So, at this ninth-month period, as nature prepares to organize the entire forebrain into a single coherent whole, the cerebellum readies the infant body for that upright stance we humans enjoy, which will be followed by walking and talking, displayed in that magnificent and excited exploration of and "building structures of knowledge of" our physical world. Infancy comes to an end and the early child or toddler appears.

To prepare for the toddler's excited charging out to explore all aspects of the world (equally dictated and orchestrated by nature's agenda), the child will not only touch but taste every item of interest in that world, and to prepare for the new diet-world opening, which will no doubt contain fats and proteins, the appropriate digestive juices are forthwith provided. Nature dutifully turns on that long-absent hydrochloric acid in the child's metabolic system. Hydrochloric acid simply wasn't needed - at least not according to millions of years of genetic encoding - in that critical "in arms" period, for which nature provides a vastly superior food and supreme method of dispensing.

So we have now come full circle in this brief sketch of overlooked aspects of birth and bonding, its ways and means and why's, from the initial enigma of no hydrochloric acid to its grand entrance as cued by nature, when the curtain rises on a new stage of development, ushering in an ongoing series of new bondings with new matrices, over the years - the family, the earth itself, society, the pair bonding leading to species renewal, bonding with one's own offspring, with the spirit within and universal without, and so on. Marshal Klaus spoke of an interlocking "cascade of redundant patterns" nature has built in to assure this critical first bonding between mother and infant, the bond which will provide for the threefold nurturing MacLean referred to, truly an "eternal golden braid" (to steal Hostadter's phrase). Marshal Klaus calls bonding the establishment of the greatest love affair in the universe, on which this wondrous unfolding of human life depends.

*A bonded mother does not abandon her infant no matter how severe the financial pinch nor socially sanctioned such behavior might be. A child bonded to mother and earth does not grow up to rape the planet.*

Now we can see the astonishing and thorough intelligence and careful planning, the intricate interweaving of a myriad of critically timed and interdependent responses which nature evolved over eons of time and invested in this birth-bonding process entrusted to us. From the beginning, however, that new life unfolds in a universe based on love or fear - depending on the relations established and model provided. So now, more than ever, we can see the astonishing extent to which modern practices have by-passed, compromised, or outright eliminated, virtually every item on the agenda of this incredible architectural design. Now we can understand why our medical interferences with birth - taken as axiomatic and unconsciously accepted as the norm by virtually the entire globe - is proving to be our global undoing.

As stated in the beginning, we cannot do to a living organism what we are now doing to the vast majority of human infants (and the ongoing spillover into the general abandonment and neglect of children taking place world-wide), without paying a dreadful price. The ruinous and hugely expensive take-over of all birthing by hospital-medical procedures has brought into play an equally huge and expensive cradle-to-grave therapeutic operation, undertaken in our efforts to repair the damage we are blindly causing at the same time. We witness the strange contradiction of a nation madly caught up in patchworks of healing and hoped for wholeness while blindly allowing a radically damaging, unnatural birth practice to continue unquestioned and unchecked.

Our contradiction overwhelms us, neutralizes our very effort at recovery, and breakdown is widespread. Child abuse and child suicide are but the most blatant signs of the breeding ground for violence our interventions are spreading worldwide. There may never have been a "golden age" of birthing and child rearing (other than a few remnants such as the Yequana Jean Leidloff wrote about), but also there are no historical precedents for a species abandoning its own offspring, as witnessed today, worldwide.

Finally, there is a direct correlation between our final abolishing of breast-feeding through an insane birthing, and daycare. Daycare, now so massively present, is but cosmetically camouflaged abandonment *and a direct result of technological interference* - as is our ecological rape of the planet. A bonded mother does not abandon her infant no matter how severe the financial pinch nor socially sanctioned such behavior might be. A child bonded to mother and earth does not grow up to rape the planet.

Key Issues

Joseph Chilton Pearce  
*Conflict of Interest  
Between Biological  
and Cultural  
Imperatives*

A survey of technological  
birth & its impact

Taking away a woman's rights over her own reproductive process has been a disaster, but intervening in and all but abolishing the bonding of mother with infant at birth is a devastating crime against nature; perhaps the most criminal and destructive act on the planet today, and an ultimate, if slow but sure, instrument for species' suicide.

Until we get routine medical-hospital interference out of birthing, and put birth back into the hands of women and the mother herself, as nature intended, we will continue to decline as a species.

We must and can awaken the public at large to this issue, the means can be found. Surely the "collective cultural imperative" for medical intervention is enormous and powerful. And surely our entire culture promotes the medical myth through film, literature, the daily news, schooling, on and on. There is an almost direct parallel with the issue of smoking in the latter half of the twentieth century.

Surely the task at hand is daunting, enormous, and would require careful long-range planning, carefully organized strategies for undermining the medical myth and disempowerment of woman, and creating a new image of birthing and womanhood. We can't do this, however, by pussy-footing around the issue, afraid we might offend. Surely that myth is woven into every fiber of the social fabric, but that fabric is becoming our shroud - which we can and must unravel. Just as we can and must awaken in future mothers the ancient intelligence of the heart; de-condition her culturally imprinted self-doubt and fear; and restore in her the knowledge and power of *being* the mother of our race, with the courage to act accordingly. In undertaking such a restoration, we will unfold an ongoing educational agenda not only for survival, but for a higher, nobler, more compassionate way of life.

*Joseph Chilton Pearce*

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## *Touch the Future*

*A Non-Profit Learning Design Center  
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