

# Birth Traumas: Violence Begets Violence

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Paula M. S. Ingalls

Bronxville, NY, U.S.A.

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**Abstract:** Today, the sciences are so overspecialized, it is difficult to remain current on what is being discovered in other corners of research. Ronald Kotulak, science reporter for *The Chicago Tribune*, has interviewed over 300 researchers in the various neurosciences. His findings have been published in his book *Inside the Brain*. The new consensus is that the environment and experience are the architects of the brain. Biology is **not** the cause of violence; biology is shaped by external stimuli which reshape the neural response mechanisms. If those environmental influences are violent, aggression, impulsivity, and nihilism are wired into the structural network of neural connections in the brain and in the functional efficacy of the brain cells. Scientists have found that epilepsy and depression can be learned behaviors, implying that such diseases and other mental disorders can be corrected by relearning, especially when treated early in life. To wit, examples are given of my own personal psychotherapeutic work during the last twenty-five years. These examples, as do the latest psycho-neuro findings, suggest that we can no longer separate the mind from the brain or body from the soul whether one is a pre- or perinatal being or an adult. The development of the brain, thus the mind, begins upon conception when the zygote is already in a state of experience that will affect it for life – either for better or for worse depending on the particular culture and environment the new organism is formed in.

**Zusammenfassung:** *Geburtstraumen: Gewalt zeugt Gewalt.* Heute sind die einzelnen Wissenschaften so hoch spezialisiert, daß es schwierig ist, in den einzelnen Forschungsbereichen auf dem laufenden zu bleiben. Der Wissenschaftsjournalist der *Chicago Tribune*, Ronald Tulaka hat 300 Wissenschaftler aus den verschiedenen Bereichen der Neurowissenschaften interviewt. Die Einsichten hieraus hat er in seinem Buch *Inside the Brain* veröffentlicht. Der neue Konsens ist, daß die Umgebung und die Erfahrung die Architekten des Gehirns sind. Biologie ist **nicht** die Ursache von Gewalt, Biologie wird durch äußere Reize geformt, die den nervalen Reaktionsmustern ihre konkrete Gestalt geben. Wenn die Umwelteinflüsse durch Gewalt, Aggression, Impulsivität und Nihilismus bestimmt sind, dann werden diese in das strukturelle Netzwerk der nervalen Verbindungen im Hirn und in die funktionale Wirksamkeit der Hirnzellen eingeschrieben. Wissenschaftler haben gefunden, daß Epilepsie und Depression gelernte Verhaltensweisen sein können. Dies impliziert, daß solche Erkrankungen und andere geistigen Störungen durch ein Wiederlernen oder Neulernen korrigiert werden können, besonders, wenn sie früh im Leben behandelt werden. Als Beleg für diese Zusammenhänge werden Beispiele aus meiner persönlichen

psychotherapeutischen Arbeit während der letzten 25 Jahre gegeben. Diese Beispiele und ebenso die neuesten wissenschaftlichen Befunde legen es nahe, daß wir nicht länger Geist und Hirn oder den Körper von der Seele trennen können, sei dies nun bei einem prä- oder perinatalen Kind oder einem Erwachsenen. Die Entwicklung des Gehirns und damit ebenso des seelischen Erlebens beginnt mit der Konzeption, wo die Zygote schon im Zustand eines Erlebens ist, das es in seinem Leben beinflußt – ob nun zum besseren oder zum schlechteren hängt ganz von der besonderen Kultur und der Umgebung ab, in denen sich der neue Organismus entwickelt.

## Introduction

“Biology is not the cause of violence; The biology is in response to the environment.”

(Kotulak 1996, p. 91)

“Starting from the womb, the brain’s functional organization never ceases to change but varies according to its experiences.”

(Restak 1986, p. 80)

Today, heinous crimes, violence, greed, and corruption are higher than ever. Statistics are not necessary to underscore this reality. Certainly in America, the public cannot but be aware of its appalling numbers and daily occurrences to the point that it numbs us. Our indignation and rise to action against violence is often stilled. Except in Hollywood, on Madison Avenue, in Silicone Valley (West coast), and Silicone Alley (East coast) where the movie, video, television, advertising, and computer industries create and peddle commercialized aggression. America is glued to the tube engrossed in violent action dramas and gruesome vampire movies and videos, supercilious advertising, and computer war games. I can’t resist the latest statistic: On the average our nation’s children devote more than twenty-one hours per week to television alone (Steinberg 1997). Worse still, listen to the music and lyrics of our times that disclose the primal philosophy that guides the lives of our punkster youth for “music is the mirror of what we see in the world out there” (Sonne 1996). With blood-colored guitars, these youngsters glorify violence, nihilism, and suicidal tendencies because “in death at last you are free” . . . “There is no tomorrow, only pain from yesterday – the killer of hope and life.” However, crime, glorified antiheroes, and punk rock are open and visible manifestations of violent mind-sets in people and society that can be combated for we can “name it and, therefore, fight it” (Delbanco 1995).

There is another type of violence: malevolence couched in benevolence which is best explained by a few quotes out of many from Lewis Lapham, and R.D. Laing (see also Shengold’s book *Soul Murder: The Effects of Childhood Abuse and Deprivation*).

“A society that presumes a norm of violence and celebrates aggression, whether in the subway, on the football field, or in the conduct of its business [and politics] cannot help making celebrities of the people who would destroy it” (Lapham 1985; italic mine).

“From the moment of birth [if not before], when the stone-age baby confronts the twentieth-century mother, the baby is subjected to these forces of violence, called love, as its mother

and father have been, and their parents and their parents before them. These forces are mainly concerned with destroying most of its potentialities. This enterprise is on the whole successful" (Laing 1967; italic mine).

No wonder! According to Vladimir Nabokov (1955), a fetus is "The tiny madman in his padded cell." To Freud, the child is a "selfish savage" while to Melanie Klein a "murderous cannibal" (Gay 1988, p. 468) whose impulses must be civilized forthwith. Proponents of this type of view believe that "every human being is born with the instinct to indulge in unprovoked violence" (Mark and Ervin 1970, p. 1).

How do many practitioners of pre- and perinatal care perceive prenatals and tiny infants? Materialism propounds that a newborn is nothing more than a bundle of neurons and reflexes (Gruenberg 1957; Brazelton 1969; Greenspan and Greenspan 1985; Janus 1996). It is neither sentient nor emotionally efficacious. To wit: in the debate over the ban of intact dilation and extraction of the fetus, or partial birth abortion after the 20th week of gravidity, *The New York Times* quoted a doctor whose name was withheld: "he and his colleagues do not believe that a fetus, despite having reflexes, is sensate until **the end of the last trimester**. The woman is our patient, not the fetus" (Sontag 1997; emphasis mine). Such attitudes toward pre-/neonates and children have sustained pre- and perinatal care, birthing, and rearing practices that Wilhelm Reich so aptly viewed as "a largely medically-induced 'original sin'" of which the obstetrical practices Reich regarded "as harmful as the bloodletting in former times" (Herskowitz 1996, p. 418).

### **Materials, Methods, and Results**

During the past ten years, the society of sciences (among others: neurobiology, microbiology, genetics, teratology, neuropharmacology, psychoneuroendocrinology, pre- and perinatal psychology, as well as various forms of psychotherapy) have proven those adherents to materialism quite wrong. To be sure, the prenatals are neurobiologically, neurochemically, psychologically, and emotionally a receptive, responsive, and expressive human being at a much earlier stage in utero than ever imagined (Chamberlain 1990, 1995; Restak 1986; Squire 1987; Verdy 1992; Goleman 1995; Benešová 1996; Bolle 1996; DeMause 1996; Fedor-Freybergh 1996; Janus 1996; Kotulak 1996).

The focus of this paper will be on how violence begets violence according to the latest neurobiological scientific findings augmented by examples from my personal recovered traumatic history.

On the one hand, I am reporting on the neuro- and related sciences which have made great strides in documenting the histogenesis and organogenesis in the embryonic, fetal, and perinatal periods and at what time of gestation the functions of cells, organs, and brain centers become sufficiently efficient to be operative and interactive. Too, awareness is growing concerning the teratogenic effects of stress, toxins, drug therapies, and obstetrical harsh practices on the structural and functional development of cells, brain, and eventually the "neuro-psycho" behavior of the individual. Such discoveries are objective and proof positive of the relationship between stress and violence inflicted pre- and perinatally and the violent behaviors of our youth in particular (Mark and Ervin 1970; Restak 1986; Goleman 1995; Swerdlow 1995; Kotulak 1996; Begley 1996; Nash 1997).

On the other hand, I was a product of the “sinful” materialistic practices that began around the sixth month in utero and spanned the first sixteen years of my life which entire period was banned from my conscious memory and mind by means of dissociative-repressive amnesia (Terr 1994). During twenty-five years of psychotherapy, called ‘Derepression and Reprocessing’ (Ingalls 1996a, 1996b), I recovered my entire history and subconscious or primal philosophy, including five traumas surrounding birth, two at the age of two, and one at ages eight and sixteen each. Traumatic pre- and perinatal experience par excellence set the quality of the foundation of and lay the groundwork toward a violent mind-set, which instills a primal philosophy that dictates behaviors, attitudes, and perceptions during childhood development and into adulthood. Examples of my therapeutical findings will be used to flesh out the reported scientific findings of cause and effects such as early trauma affecting the neural chemical balances, synaptic formations, and neural pathways which in turn affect future behaviors. To wit, my mother confirmed that since the sixth month in utero, as a transverse fetus I was regularly turned. This versional handling caused me often to be rudely and unexpectedly awakened. I was similarly startled out of my sleep after birth when picked up to be fed. Feedings were regulated by the clock and, at first, took place at two-hour intervals. Especially during therapy when dealing with these experiences, I developed a compulsion. Before each session and even during sessions, I made triply sure that the door to my apartment was locked and nobody could unexpectedly intrude upon me. I presumed to be interfered with which was the underlying unconscious notion of this urge. This anticipatory psychology disappeared once these pre- and perinatal experiences were dealt with.

Much of the following material has been gathered from Ronald Kotulak’s book *Inside The Brain*. Mr. Kotulak, the science reporter for *The Chicago Tribune*, has interviewed more than 300 researchers from many countries. All quotes are from his book unless otherwise noted.

The new consensus of the first magnitude is that experience is the architect of the brain and nervous system “which uses the outside world to shape and reshape itself” (p. xii). “The genes, the chemical blueprints of life, establish the framework of the brain, but then the environment takes over and customizes it” (p. 4). “Pushing the right biological buttons, scientists are finding out they can make the future brighter for many children whose development otherwise would have been stunted. The buttons are the senses – vision, taste, smell, touch, and sound – that can physically reshape the brain by engaging its genetic gears and hormonal levers” (p. 45). In this light, the term ‘experience’ is applied in the broadest sense of the word. It includes:

1. The influence of the environmental “embryotoxic agents via meals, water, air, remedies, infections, and the whole socio-economic sphere” (Jelínek 1996), such as
2. The psycho-emotional and mental condition of the parents to be – especially the mother – their family constellation, the atmosphere at home, and the culture they live in and beliefs they subscribe to. Because “no newborn is as helpless as the human one, culture is a greater imprinter than the physical environment” (Restak 1986, p. 73).

3. Part of the culture is the philosophical approach to and quality of the medical pre- and perinatal care, especially when it is high-tech care or non-existent;
4. The cellular, chemical, neural, and psycho-emotional reactivity, or lack thereof, of the growing fetus and newborn;
5. Exposure, or failure thereof, to a rich environment that engages all the 'buttons' after birth, as well as
6. Stimulation, or absence thereof, by good education throughout childhood and adolescence.

Thus, this concept of experience confirms the idea that from the moment of conception and the first mitosis, or cell-division, the organism is in a state of experience which affects it positively and negatively to its dying days. For example, a pregnancy as a result of rape may already affect the development of and leave imprints on the new zygote, such as tension which may affect the processes of cell-division and later on cell migration (Kafkalides 1995, p. 145).

According to Restak (1986), starting at two and a half weeks in utero, neurons start multiplying at an incredible rate; after about two months, the cortex is generated; motor cells develop before the sensory ones, interneuron connections follow, while the supporting and nutritive cells – glia – are generated last. Synapses begin to form in the brain in about the second month of gestation and the process is well advanced at birth. At twenty weeks, hand movements smooth out and intention appears. "Dr. Hooker (1972) believes that at twenty weeks reflex activity is executed by means of the midbrain, lower brain stem, and spinal cord and does not involve the cerebral cortex or subcortical regions. But soon after that, subcortical areas become functional to an increasing degree. For example, the premature infant's failure to maintain adequate body temperature indicates incomplete function of the hypothalamus. With the passage of time, the circuits within the hypothalamus become activated. The slightly older premature baby can now regulate its own temperature" (Restak 1986, p. 110).

Dr. Peter Huttenlocher, Neurobiologist at the University of Chicago, has established that "at eight months a baby's brain has about 1,000 trillion connections, which the brain will prune down gradually to half that number." This overproduction is "to guarantee that a newborn will have sufficient extra wiring to be able to receive input from any environment it is born into – cultural and geographic – to which it can adapt."

In spite of its plasticity, "the brain can get damaged from environmental threats and stresses, or from alcohol and drugs," or from maternal neurosis and psychosis, or "from stroke and head trauma," such as possibly caused by forceps and caesarian section during delivery (p. xi, xii). A note on nicotine. A recent study has shown that exposure to tobacco in the womb stunts fetal growth. "Cotinine levels in newborns of smoking mothers were about 550 nanograms per milligram of urine – virtually the same level found in the smoking women. Cotinine is the substance that remains when nicotine breaks down in the body" (*The New York Times* 1997). Damage can result in "a wide variety of ills ranging from aggression, language failure, depression, and other mental disorders to asthma, epilepsy, high blood pressure, immune-system dysfunction, diabetes," and arrhythmia (p. 35).

The human brain is measurably dependent on sensory experience most especially during the four major periods, or windows of opportunity, during which the

brain undergoes structural changes: in fetal development, after birth, between ages four and twelve, and during the ensuing years“ (p. 6). If the proper fundamentals are not learned at an early age, the opportunity to establish basic brain connections is missed because the connections are only promoted by activity (Begley 1996; Nash 1997). For instance, the sense of hearing teaches sound which leads to acquisition of words which in turn leads to language, reading, writing, and later on to thought and concept formation. If the foundation of learning sounds is faulty, the brain is almost irreversibly handicapped because “the unused sound cells die off or are assigned to other functions by the brain” (p. 17, 19). “The critical period for learning language, for instance, is totally lost by about age ten” (p. 27).

For example, “Martha Pierson, Neurobiologist at the Baylor College of Medicine in Houston, found that if rats were prevented from hearing sounds during the critical period, the connections among their brain cells do not organize into normal patterns. Confronted with normal sounds later, these rats would attack anything in sight for five to ten seconds and then go into convulsions and subsequently would die if not treated” (p. 41). Similarly in experiments, “cats had been raised in total darkness. Consequently, the visual pathways in the brain did not develop. The nerve cells were dead. It is the environment that produced these permanent changes in the brain structure” (Mark and Ervin 1970, p. 6).

Conversely, if stimulation is applied prenatally, babies have shown superior fine and gross motor skills, earlier speech and language performance, earlier smiling and laughing when compared with controls (Chamberlain 1997). “In a pioneering study, Janellen Huttenlocher of the University of Chicago, showed that when socio-economic factors were equal, babies whose mothers talked to them more had a bigger vocabulary. At 20 months, babies of talkative mothers knew 131 more words than infants of less talkative mothers. At twenty-four months, the difference was 295 words” (p. 31). Too, “in autopsy studies, the dendritic material was also found to be dramatically increased in university graduates when compared to high school dropouts” (p. 18).

Empirical findings, especially where early speech and language performance are concerned, are now grounded in neuroscience. “The left and right sides of the brain appear to become specialized during fetal development [beginning at about 28 weeks in utero]. The right hemisphere grows faster and favors more primitive characteristics, like emotion. The left hemisphere starts growing later and is in charge of newer acquisitions, such as language. Language is located in totally different areas of the brain. Unlike vision and touch, which stay in specific areas, language can shift to different cells at opposite sides of the brain, if necessary. The left brain processes information faster than the right side. In children with developmental language disability, scientists have found that part of their brains were running in slow motion and their hemispheres were balanced. These children heard sentences as an indistinguishable string rather than a series of separate words. Children with normal language skills have lopsided brains: the left is bigger and more active than the right side. Thus, the language disabled have an underpowered left hemisphere. Too, having a very stressful pregnancy is highly correlated with the failure to show the expected structural lateralization [left and right hemisphere differences] in the brain” (p. 27–30).

However, the brain can make up for deficits. “At Indiana University of Medicine, Otolaryngology Department, Dr. Mary Joe Osberger and colleagues surgically implanted artificial ear devices, or cochlear implants, into children who were born totally deaf and who had never learned to speak. This new technology helped them to hear. They learned to speak and use language” (p. 25–27).

“Dr. Craig Ramsey of the University of Alabama, exposed a group of impoverished inner-city children to an enriched environment – children as young as six weeks old. At twelve years of age, Ramsey tested these children and found a significant higher IQ – as much as twenty points on the IQ score – compared to the ones in the control group. PET scans showed their brain activity to be more efficient as well” (p. 47, 48).

Thus the new credos are that “when the brain is deprived of sensory experiences it withers and dies,” (p. 3) and “that the brain gets better and better through exercise,” throughout our lives (p. xiii).

“Dr. Saul Schanberg of Duke University and Tiffany Field of the University of Miami discovered one of the most important biological buttons of all: touch.” “When newborn rats were separated from their mothers they stopped growing regardless how well they were fed and medically attended to. The pups went in survival mode: the body’s need for food was subdued by stress hormones which actually turned off genetic activity so that cells could not divide. Working with ‘preemies,’ the researchers found the same chemical changes as in the rats: the stress hormone cortisol was up and DNA synthesis was down.” “‘Preemies’ that were held and had their backs rubbed regularly started to get stronger and grow by as much as thirty grams per day versus the anemic rate of twelve to seventeen grams a day before such touching therapy was used” (p. 35, 51).

Especially during fetal development and early childhood when stress persists, “the stress hormones cortisol and adrenaline become overactive and take over the genetic regulation like a band of terrorists. The terrorized genes then set up aberrant networks of connections between brain cells, imprinting how the brain has mislearned: an epileptic seizure instead of a clear signal between cells, a depressive episode instead of a happy thought, a surge of rage instead of a willingness to compromise” (p. 36). Or, as Dr. Patricia M. Rodier, professor and anatomist at the University of Virginia, phrased it, “Many systematic brain insults during brain development do result in lasting behavioral and emotional alterations, while leaving the affected being normal in appearance” (Restak 1986, p. 100).

I would like to elucidate this point from my own experiences. After having sustained several traumas before and during birth, upon delivery I was held upside down and slapped several times to elicit the required wail to initiate independent breathing. The beating came out of nowhere; as a trusting neonate, it took me totally by surprise. At first, I was shocked into paralysis while phlegm and lung fluid had a choking effect on me. With survival at stake, my brain’s fight-or-flight mechanism went into full gear by responding first with a blind kill-type rage and next with losing consciousness. Upon this episode of overstimulation one of under stimulation ensued. During the subsequent trauma, I was left in shock without being given any treatment. As a result, I felt rejected and abandoned. Needing release from all the traumata, I became first enraged against myself for not being able to release the pent up trauma-engendered emotions and feelings without as-

sistance. Subsequently, failure taught me to emulate that state of unconsciousness by lying stock-still in my crib blocking all awareness of feelings and sensations, i.e., a shutting off of communicating with my inner self – the precursor of repression. Not long afterwards, I was force-fed every two hours. Again, the same fight and flight responses occurred. When my rage proved to be impotent, I turned apathetic. For the rest of my life until I entered psychotherapy, I remained perpetually in a state of hyper tension ready to fight or seek flight at the merest imagined or real perception of danger. I was always on the go; I could and would not stand or sit still and be ‘caught dead.’

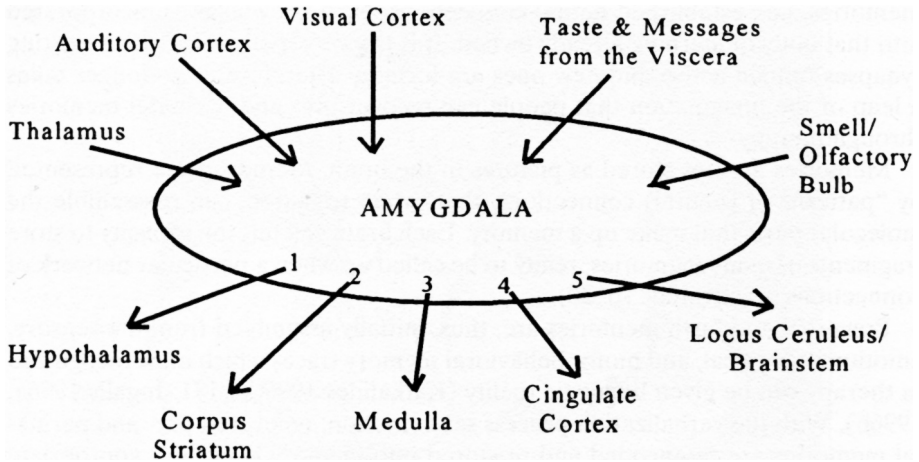
The point is that in any given situation, especially young infants respond with their first learned behaviors and use strategies ‘that worked before.’ It is as if its emotional and sensory brain goes through its Rolodex of chronologically and cross-indexed organized response cards. Each response behavior, whether reflexive or learned, creates or reinforces synaptic connections and neural pathways of which there are relatively few compared to mature adults whose neural connectivity allows for a varied behavioral repertoire including reflection and thought. This is vital. For infants who learn to respond with rage develop behaviors that are not represented in the neocortex by formulated thoughts. Yet, they retain the emotional memories. As these children grow up, they will continue to respond with curses, fists, and kicks precisely because that were the behaviors they learned first. To stop such activity, their brains will have to be retrained and rewired possibly by drug therapies and certainly by learning new strategies and ideas.

According to Dr. Joseph LaDoux, Neuroscientist of the Center For Neural Science at New York University, the emotional system, or limbic brain, can act independently of the neocortex (Goleman 1995, p. 18). In ablation experiments with cats, the neocortex was removed. This decortication procedure left the limbic system as the main functioning brain. The cats’ personalities did not change except when threatened. Without the neocortical control, they became emotionally explosive and ferocious. Similarly, removal of the amygdala tamed a predatory and vicious lynx for good while the removal of the ventromedial nucleus of the hypothalamus made a wild beast out of a pussy cat (Mark and Erin 1970, p. 28, 29).

I would like to illustrate some of the neurocircuitry involved when fright is induced as described by Daniel Goleman, in *Emotional Intelligence* (1995, p. 298, 299; see Fig. 2). With the onset of fear, a general alert is triggered by the amygdala, activating the hypothalamus, brain stem, and automatic nervous system.

From the amygdala, which also acts as the storehouse of emotional memories, projections extend to every part of the brain. From the central and medial areas a branch goes to the hypothalamus (1) that secretes CHR (corticotropin) and other hormones which mobilize the fight-or-flight reaction. The basal area connects to the corpus striatum (2): a link to the brain’s system for movement. The central nucleus signals via the medulla (3) to the autonomic nervous system causing responses in the cardiovascular system, muscles, and intestines (gut). From the basolateral area of the amygdala, extensions go to the cingulate cortex (4) and fibers, known as “central gray,” cells which regulate the large skeletal muscles. Another pathway goes to the locus ceruleus in the brain stem (5) which manufactures norepinephrine (or noradrenaline): a stress hormone that suffuses the





**Fig. 1.** Vital brain structures of the emotional or limbic brain (Ingalls 1997)

cortex, brain stem, and limbic system itself. This hormone makes the sensory circuits more sensitive; it also increases blood pressure, speeds up heart rate, and affects breathing, such as its suspension when in fright or behaviorally paralyzed. Thus, a neonate repeatedly subjected to severe fright will have a lot of reinforced connections from the various centers to the amygdala and from there to other parts of the middle and lower brain sections, as well as overproduction of norepinephrine and other hormones. As a result, behaviors in response to fear are also firmly encoded in the brain’s neural networks, especially as the amygdala stores the emotional aspects of traumatic experiences and behaviors in response to them. The overall effect may be a hyper-active emotional brain.

According to several scientists, such as Dr. Schanberg, “bad experiences can lead to bad learning strategy from infancy due to a stressful environment that may have caused genes important to survival . . . to become over expressed making a person more aggressive and violent,” (p. 36-7) or withdrawn in an apathetic shell. The latter is a mind-set, an attitude that is a form of violence against the self as it curtails exploration of one’s potentialities and reduces living life to a substandard level. To quote Dr. Robert Post, Chief of the National Institute of Mental Health’s Biological Psychiatry Branch:

“Stress, through its hormonal intermediaries, turns on genes that leave a memory trace of bad feeling. Then along comes a lesser stress that triggers the same memory trace and reinforces it. Now, instead of a lousy feeling, the person gets depressed. Finally, after repeated reinforcements, the memory trace takes on a life of its own, firing willy-nilly and producing depression without any outside trigger. The idea that you can learn bad things like depression and epilepsy and that they are encoded through the genes into the physical structure of brain cells is new and exciting. It provides some of the molecular mechanisms to explain what scientists are beginning to suspect and fear can happen to people who have horrendous developmental experiences” (p. 40, 41).

Thus, early bad experiences affect the brain adversely on two particular levels: learning and memory. We learn from external stimuli but always in context of our

memories, i.e., established neural connections. New knowledge is incorporated into that body of learning already owned. It is the very method by which existing synapses remain active and new ones are formed. Therefore, it no longer takes a leap of the imagination that people can recover pre- and perinatal memories through therapy.

Memories are not stored as pictures in the brain. Memories are represented by “patterns of (neural) connections, that, when triggered, can reassemble the molecular parts that make up a memory. Each brain cell has the capacity to store fragments of many memories, ready to be called up when a particular network of connections is activated” (p. 20).

Preverbal and birth memories are, thus, initially assembled from the sensory, emotional, physical, and motor behavioral memory traces which once recognized in therapy can be given linguistic reality (Kafkalides 1995, p. 171; Ingalls 1996a, 1996b). With the verbalization process set in motion, recovered pre- and perinatal memories are re-encoded and re-stored into memory with their appropriate neural connections to the neocortex where they remain accessible to conscious awareness. To correct impulsive behavior stemming from early traumas, the verbalization is the critical part of the therapeutic process. Compulsive and impulsive actions are driven by sensory and emotional perceptions that are underwritten by subconscious judgments which can be altered only when their identity has been uncovered. For example, though terrified of my own inner rage and rarely expressing it in public in the past, in therapy any session having to do with the Upside-Down trauma began with violent physical rage followed by actual baby wailing. The manner in which the rage was physically expressed was always the same: both legs lashing out wildly and in unison as if they were bound together as they had been in actual life fifty or so years ago. This indicates that the same motor neurons were actively involved both in the past and during therapy. For years the violence seemed inexhaustible. What kept it active? A primal philosophical premise: “‘They’ beat me to ‘death.’ In return, I want to rip them to shreds, kill ‘them’ as ‘they’ did onto me. ‘They’ did not have a reason to punish me – punishment that came out of the blue. But, I do have a reason; that is only just.”

Thus, subconsciously, my rage was kept alive in the name of justice – a moral right. This type of philosophical underpinning is difficult to correct, though not impossible, because at the time the trauma took place and began to give shape to this moral stand, I was right. I had every reason to be enraged, if only in the name of survival. But after fifty-five years, I was quite wrong in maintaining that position. So, once this notion was laid bare for reevaluation, the rage stopped having a grip on me. In my own terminology, I call this the necessity of realigning one’s subconscious, or primal, with one’s conscious philosophy.

The oil painting below may give some inkling of the deep anger I held inside (see Fig. 2).

This raises a question: Why are the cells of these early memory traces not pruned as the brain is wont to do when such neural pathways remain unused or are not reinforced further. The nature of pre- and perinatal trauma is overstimulation and hyper-activity of many neurons in different parts of the brain, especially in the limbic system. Over excitation of differing neurons can be compared with the giving of opposing orders that countermand each other. Various inhibitory

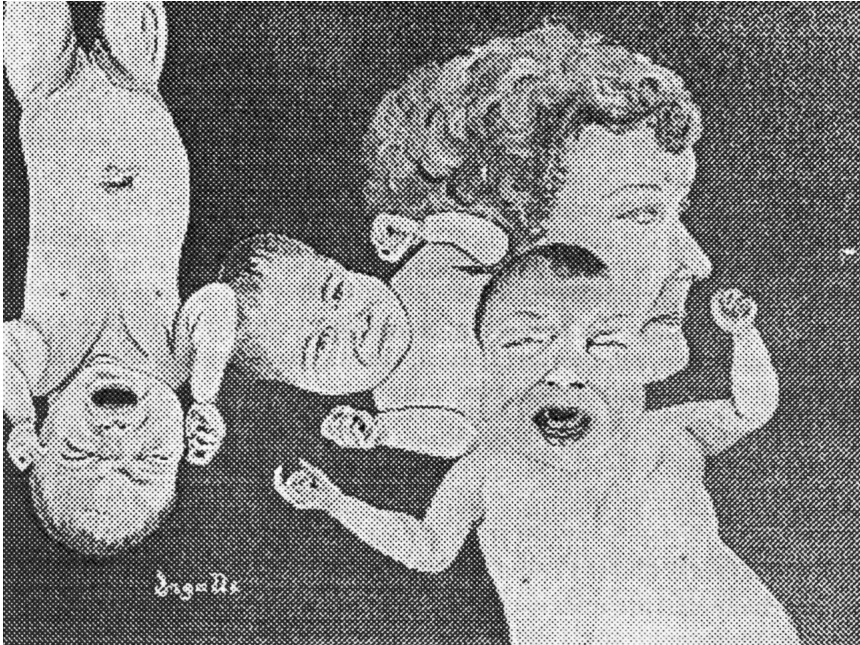


Fig. 2. "Birth Traumas" (Oil, 14" × 18", 1994)

neurons neutralize the effect of other excitatory neurons, (Restack 1986, p. 7), such as the activity of the ventromedial nucleus of the hypothalamus and that of the amygdala. Yet, the neurons in question remain excited but suspended by means of chemical productions such as the secretion of neurotransmitters and neuro-hormones from presynaptic to postsynaptic neurons. In other words, the stimulated, chemically affected neurons have become charged. Also, the greater the intensity of the stimulus, the greater the number of excited pre- and postsynaptic neurons and the larger the amount of chemical secretion. These neurons are like live wires ready to be prodded. Ensuing similar stimuli or experiences will lift the suspension allowing the order to be executed over and over again. Simplified, but essentially this is the mechanism behind psychological expectation and anticipation. Dr. Athanassios Kafkalides hypothesized similarly: "In case of the fetus, the process is the following: The excitation of sensory neurons is transmitted to immature motor neurons and effectors which react very little or not at all. The result is that the excitation is *stored* in the nervous system and remains there in a latent state" (1995, p. 133). Let me amplify with a personal example.

During the Upside-Down trauma before the last slap was administered and rage caused loss of consciousness, I tried to wail but failed – failed because I was also choking. I couldn't get the air and didn't have the energy to force the wail out. Yet the attempt was encoded. It remained in my memory and nervous system as having communicated to my handlers my distress and plea to stop. This internal stimulus couldn't have taken more than a nano second in real time, but when the final slap came the meaning of that moment was psychologically momentous and

far reaching. When it was finally spontaneously relived and blurted out in therapy, its significance was as follows:

“I told them everything there was to tell, but they did not listen. They just went on with their beating. The whole world was against me. It is not that they hated me, they just ignored me. I had nothing to say according to them. My cries were meaningless to them; my protests superfluous. It was their utter silence, indifference, blindness, and deafness towards my needs that cut me to the core. It made it all so hopeless and futile. In fact, I didn’t want to live like that; I could not live like that. There was no dialogue, no give and take. I was screaming into empty space; nobody was there. To them I did not exist. I was an object – a soulless bundle of nerves and reflexes.”

“Since, I never asked again, not anything from anybody. I either protested or stayed silent. Because to ask was to run the risk of denial, of not being listened to, and of being pushed to the edge again and fall to my death.”

Obviously, during childhood I did ask questions and did beg for candies and toys. But each denial regardless of context and age reinforced that first denial during the Upside-Down trauma. By the time I was eight and had encountered one denial too many, I began to actively refrain from asking. For many years, thereafter, I lived by the primal code that if I could not do or find it myself, I would forgo it. Fear of asking channeled the quality of my life into a very narrow straight. To ask means to hope. Philosophically, I believed in the futility of things and had given up on hope. In therapy, I traced back this part of my old negative outlook on and attitude toward life to the events before, during, and after that one nano second spoken of above. I re-experienced that moment. I was able to give it a voice and come to terms with it. In this instance, physical violence also begot philosophical violent ideas directed against the quality of my life and life as such. Apropos, to a newborn, a life or death situation brings the awareness that “‘they,’ or the whole world is against it,” setting the child up for a long-lasting predisposition of being against all people. In my case, I did generalize the idea of “wanting to rip ‘them’ to shreds” into “I have to kill all people if I am to breathe in this world at all.” Hence my intense fear of my own anger. Expression of rage would have sent me on a rampage of destruction. More precisely, my rage was held in check until well into therapy by the memory of having lost consciousness, i.e., of death.

Scientists have learned that “words can be just as powerful [if not more so in my view and according to my experience] as drugs in correcting errant brain pathways that are causing mental diseases.” “Obsessive-compulsive patients, it has been found, have an overactive caudate nucleus which is part of the emotional brain. It is a gatekeeper that prevents unwanted thoughts from establishing reinforcing circuits in the brain. Unwanted thoughts keep repeating themselves and drive compulsive behavior” (p. 22). Compulsive behavior, such as my flying into rages and withdrawing into blank states of mind, were driven by unwanted and unarticulated feelings and thoughts often shaped by emotional and sensory preverbal memories. There may be a vital difference between drug therapy and ‘word’ therapy. “Prozac (Fluoxetine) calms down the caudate nucleus as this drug raises the level of serotonin production to control impulses. Altering thoughts consciously to correct unwanted behaviors changes the pattern of brain activity associated with the thought, i.e., increases the level of real brain power” (p. 53). In terms of therapy, the latter is a time consuming but sure cure, whereas in the

case of the former “the long-term effects and side-effects are not quite known yet, even though since 1994 nearly a million prescriptions are written *per month*,” in spite of its various immediate side-effects, (Cowley 1994; Tanouye 1997). Today, statistics show that twenty-eight million Americans are on antidepressants, whose manufacturers are now exploring the market for children.

## Discussion

In the last twenty-five years, there has been a doubling of the rates of depression, suicide, crimes of violence, drug and alcohol abuse at a time of the doubling in divorce rates, less parenting time, poverty, the mobility of the population” (p. 42) and an increase in technological pre- and perinatal care and birthing practices. We are confronted with such atrocities as live neonates being thrown in dumpsters (three reported cases in the last half year), children being shoved out of windows because their baby wails were irritating to the child-mother, and school children attacking each other mortally because of dirty looks. Lest we draw the wrong conclusion and blame their brain systems, these brains are only different due to bad environmental experiences inflicted by society and parents. Thus, we can assign an actual cause to what Freud termed innate drives that need to be tamed, namely neural wiring gone awry due to environmental influences. Children so affected “are at risk for the development of a variety of cognitive, behavioral, and emotional problems, and puts them at greater risk for developing certain neuropsychiatric disorders,” according to Dr. Bruce Perry, Neuropsychiatrist at Baylor College of Medicine in Houston (p. 43). Early traumatic experiences put kids at risk when they grow older because “they have fewer coping skills and fewer ways to solve problems. Adrenaline is a major stress hormone that increases blood pressure, speeds up the heart beat, tightens muscles, and in other ways prepares the body for action in emergencies. These stressed children are hyper aroused, impulsive, and have difficulty concentrating which disposes them to use aggressive and violent strategies to try to solve problems” (p. 43-44).

In my own case, I developed many learning disabilities: dyslexia, inability to remember, loss of concentration, an ineptitude in grasping meanings, speech problems, inferior social skills, notably communication, and last but not least, a fanatic and fundamentalistic mental attitude, a linear mode of thinking that made me blind toward questions of fairness, mitigating circumstances, consideration, and compassion. In any dialogue, I was mentally aggressive and verbally abusive. When in high school, I doubled two classes or passed on probation to the next grade for academically I could not rise beyond a C-grade. However, once well into therapy, I went to college at age forty-four and was an A-student. This is an instance that shows that the brain is more remarkable than imagined for the brain remains plastic enough to correct earlier created neurochemical imbalances and “mislearned neural connections.” With inducement and self-motivation, negative behavioral patterns can be changed through new learning experiences at any age. Negative mental attitudes can be reversed into positive and life embracing ones until our last days. But, why wait till curative measures are required if prevention is at hand. The neurosciences have made incredible discoveries – knowledge that need to be disseminated to mothers to be, pre- and perinatal care givers, obstetri-

cians, gynecologists, midwives, child psychologists, teachers, politicians, and the public at large for the cost of the expansion of police forces, judicial and prison systems, special education, psychiatric intervention, and other medical services are astronomical. Society cannot sustain such taxing increases indefinitely.

In this picture, let us not forget the newborns, infants, toddlers, and children who come to us in trust and are betrayed often by ways and means of malevolence disguised as benevolence. They pay the real price, and at what cost.

In conclusion, I cannot stress enough that biology is shaped by the environment. Conception bestows upon us the genetic given – whatever the specific heredity – which soon begins to be customized in more ways than one. It is not only the neural connectivity and a specific cell's functionality that makes each of us unique. What makes us truly individual is the mental contents in the form of thoughts, ideas, learned predispositions, judgments, sensory and emotional reactions, i.e., our subconscious and conscious philosophy. The known and unknown components of our personal philosophy are, of course, shaped by our experiences, by thoughtful deliberations, and a mixture thereof. Therefore, we can no longer separate the mind from the brain, and the soul from the body. They are uniquely integrated and dependent on each other. Together with the power of intelligence and free will, we can both cultivate and enhance nature to create a more humane society.

## References

- Begley S (1996) Your Child's Brain. Newsweek, Febr. 19, p. 55–62
- Benešová O (1996) Perinatal Pharmacotherapy and the Risk of Late Neuro-Immuno Behavioural Deviations. *Int. J. of Prenatal and Perinatal Psychology and Medicine* 8(suppl):53–62
- Bolle R (1996) Am Ursprung Der Seelischen Welt. *Int. J. of Prenatal and Perinatal Psychology and Medicine* 8(4):479–502
- Brazelton TB (1969) *Infants and Mothers, Differences in Development*. Delta Publishing Co., Inc., New York, NY
- Chamberlain DB (1990) *Babies Remember Birth*. Ballentine Books, New York, NY
- Chamberlain DB (1995) *Babies Are not What We Thought: Call for a New Paradigm*. San Diego, CA
- Chamberlain DB (1997) Prenatal Stimulation. *The APPPAH Newsletter, Official Bulletin of the Association for Pre- and Perinatal Psychology and Health, Winter 1996–97*, Geyersville, CA
- Delbanco A (1995) *The Death of Satan*. Farrar, Straus, Giroux, New York, NY
- DeMause L (1996) Restaging Fetal Traumas in War and Social Violence. *Pre- and Perinatal Psychology Journal* 10(4):229–260
- Fedor-Freybergh P (1996) Prenatal and Perinatal Psychology and Medicine: A New Approach to Primary Prevention. *Int. J. of Prenatal and Perinatal Psychology and Medicine* 8(suppl):17–28
- Freyd HJ (1996) *Betrayal Trauma: The Logic of Forgetting Childhood Abuse*. Harvard University Press, Cambridge, MA
- Gay P (1988) *Freud: A Life for Our Time*. W.W. Norton & Company, New York, NY
- Goleman D (1995) *Emotional Intelligence*. Bantam Books, New York, NY
- Greenspan S, Greenspan NT (1985) *First Feelings, Milestones in the Emotional Development of Your Baby and Child*. Penguin Books, New York, NY

- Gruenberg SM (1957) *Infancy and Infant Care*. The Encyclopedia Americana, The International Reference Work, Americana Corp., New York, NY Vol. 15, pp. 104–107
- Herskowitz M (1996) Wilhelm Reich: Studies in Earliest Childhood. *Int. J. of Prenatal and Perinatal Psychology and Medicine* 8(4):415–426
- Hooker D (1972) *The Prenatal Origin of Behavior*. Porter Lecture Series 18, University of Kansas Press, Lawrence, Kansas. In: Restak RM (1986) *The Infant Mind*. Double-Day & Company, Inc., Garden City, NY
- Ingalls PMS (1996a) Birth Memories, Psychotherapy and Philosophy. *Int. J. of Prenatal and Perinatal Psychology and Medicine* 8(2):157–170
- Ingalls PMS (1996b) *Derepression and Reprocessing: Food for Thought from a Patient*. *Int. J. of Prenatal and Perinatal Psychology and Medicine* 8(4):433–450
- Janus L (1996) *The Prenatal Experience: Psychotherapeutic Situation and Possibilities for Prevention*. *Int. J. of Prenatal and Perinatal Psychology and Medicine* 8(suppl):29–38
- Jelínek R (1996) *The Borderland of Teratology and Developmental Psychology*. *Int. J. of Prenatal and Perinatal Psychology and Medicine* 8(suppl):47–51
- Kafkalides A (1995) *The Knowledge of the Womb*. Translated by Sandra Morris, Triklino House, Corfu Greece
- Kotulak RM (1996) *Inside the Brain*. Andrews and McMeel, A University Press Syndicate Company, Kansas City
- Laing RD (1967) *The Politics of Experience*. Quoted in the *Columbia Dictionary of Quotations*, Columbia University Press, New York, 1993
- Lapman LH (1985) *Citizen Goetz*. Quoted in the *Columbia Dictionary of Quotations*, Columbia University Press, 1993
- Mark VH, Ervin FR (1970) *Violence and the Brain*. Harper Row, Publishers, Inc., Hagerstown, MD
- Nabokov V (1955) *Lolita*. Quoted in the *Columbia Dictionary of Quotations*, Columbia University Press, New York, 1993
- Nash MJ (1997) *Fertile Minds*. *Times Magazine*, Febr. 3, p. 47–60
- Restak RM (1986) *The Infant Mind*. Double-Day & Company, Inc., Garden City, NY
- Shengold L (1988) *Soul Murder: The Effects of Childhood Abuse and Deprivation*. Fawcett Columbine, New York
- Sonne JC (1996) *Prenatal Themes in Rock Music*. *Int. J. of Prenatal and Perinatal Psychology and Medicine* 8(4):451–463
- Sontag D (1997) *Experts Call ‘Partial-Birth’ Just One Way*. *The New York Times*, March 21, p. 1, 24
- Squire LR (1987) *Memory and Brain*. Oxford University Press, New York
- Steinberg J (1997) *Rechanneling A Child’s Attention*. *The New York Times*, March 13, p. B1
- Swerdlow JL (1995) *Quiet Miracles of the Brain*. *National Geographic*, Vol. 187(6), p. 2–41
- Tanouye E (1997) *Antidepressant Makers Study Kids’ Market*. *The Wall Street Journal*, 4/4, p. B1, 6
- Terr L (1994) *Unchained Memories*. Basic Books, Harper Collins Publishers, Inc., New York, NY
- The New York Times* (1997) *Smokers’ Babies Show Nicotine Level of Adults*. March 21, p. A19
- Verny T (1992) *Obstetrical Procedures: A Critical Examination of Their Effect on Pregnant Women and Their Unborn and Newborn Children*. *Pre- and Perinatal Psychology Journal* 7(2):101–112
- Wright L (1995) *Double Mystery*. *The New Yorker*, August 7, p. 45–62