Title: Childbirth: The Genetic-Psychosomatic Mother-Child Tango.  
To the new theory of parturition

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Study Paper

“Nature knows best”  
Postulate

Abstract

In this paper, the authors conduct a system analysis of the outcomes from contemporary scientific research. They describe the natural system that regulates parturition as a genetic-psychosomatic phenomenon, wherein all the major systems in the bodies of both the mother and child are aligned towards the central goal — the birthing of a person.

Approximately 2-3 weeks before delivery, notable processes commence in the uterus. These include desympathization and the formation of an acupuncture network. Along the channels of this network, wave flows of biologically active substances, possessing both contractile and inhibitory properties, move. These substances are transported by the bloodstream and blood cells. Importantly, these substances also exhibit psychotropic properties, thereby enhancing their impact on the brain and inducing a state of altered consciousness in both the woman and the child.

As childbirth approaches, researchers have identified the activation of a locus on chromosome-2 in the prenate. This discovery leads them to assert that it is the prenate that initiates the birthing process.

Keywords
childbirth, system of the parturition, gene regulation, acupuncture system, state of altered consciousness, prevention of disorders, prenate, pain

Introduction.

The fusion of childbirth and pain is deeply ingrained in the collective consciousness, held not only by the general population but also by some specialists. Despite this, the origin of the pains associated with childbirth remains enigmatic. Williams Obstetrics Manual [1] acknowledges this puzzle, stating, «Unique to physiological muscle contractions, uterine smooth muscle contractions are painful during labor. The cause of the pain is definitely not known» (p. 154). Various hypotheses, such as hypoxia of the contracted myometrium, attempt to elucidate this phenomenon.

While the pain in childbirth continues to baffle, the mechanics of parturition might seem like a thoroughly studied and understood process. However, anomalies in labor activity pose a frequent complication, reaching up to 15-20%, with discoordination noted in 70-80% of nulliparous pregnant women [2]. In recent years, there has been a rising trend in this pathology, particularly among residents.
of megacities [3], without a clear explanation. This pathology often leads to birth trauma, necessitating emergency caesarean section.

Some obstetricians have argued that women lack an understanding of when labor begins and are unable to consciously regulate it [4]. This led to the development of a set of obstetric interventions, including early amniotomy with intravenous administration of oxytocin, antispasmyotics, and other measures. It took nearly 50 years of clinical observations and studies before WHO experts opposed the use of this intervention package in 2018.

The dearth of theoretical knowledge about the organization of the birthing process and the causes of its disruptions impedes the development of reliable methods for preparing women for childbirth, guiding them during the process, and preventing potential disorders.

Regrettably, scientific research in this direction has yet to receive due recognition for its contributions to the theory of childbearing.

**Purpose of the study**

The overarching goal of this study is to undertake a systematic analysis of contemporary scientific data on parturition regulation. The objective is to formulate a concept applicable in both medical and psychological realms to support women throughout pregnancy and childbirth, fostering an environment where women can give birth autonomously, free from pain, trauma, and with positive emotions.

**Methodology**

Scientific data were meticulously curated from recent monographs and articles predominantly published within the last few decades in peer-reviewed journals, encompassing works in both English and Russian. Article selection was predicated on their citation, ensuring a foundation of reliable and widely acknowledged research. Additionally, seminal works such as the Williams Obstetrics Manual [1] and the National Manual of Obstetrics [5] were scrutinized. In a nod to our predecessors and to maintain a continuum of knowledge, we paid homage to the Multivolume Guide to Obstetrics and Gynecology [6]. Recognizing the enduring scientific value of data from that era, we sought to bridge the temporal gap and reinterpret their significance in light of contemporary scientific advancements. Each published scientific datum was evaluated for its potential role in the intricate regulation of parturition.

This refined approach positions our study at the forefront of integrating historical wisdom with modern scientific understanding, aiming to reshape how we comprehend and support the profound journey of pregnancy and childbirth.

**Results of the Research: Deciphering the Genetic Symphony of Human Birth**

**Gene Regulation in Human Birth. A Genetic Choreography**

A comprehensive system analysis of scientific data illuminates the orchestrated nature of human birth—spanning conception, pregnancy, childbirth, and postpartum adaptation—as a genetically determined process. This intricate dance unfolds through the dynamic interplay of gene systems within both the child and the mother, exhibiting high activity and coordinated expression across numerous genes.

In a groundbreaking study involving 74 researchers from 9 countries, a genetic locus within the fetal genome was identified for the first time, situated on chromosome 2 (2q13), and intricately linked to the duration of pregnancy. Within this locus reside genes from the interleukin-1 (IL-1) family, pivotal in regulating cytokine production that dictates pro-inflammatory reactions. Particularly in the days preceding childbirth, these genes assume a central role in cervical maturation, initiation of uterine contractions, and the eventual detachment and rupture of membranes. The significance lies in the assertion that the child actively determines the timing of their birth, given the higher prevalence of these genetic variations in the fetal genome aligning with the birth timeline [7].

Concurrent studies have observed a *dramatic increase in the size of the baby’s adrenal glands* during the final weeks of pregnancy, accompanied by a substantial increase in steroid hormone secretion, reaching up to 100-200 mg/day, far exceeding the levels observed in resting adults (30-40 mg/day) [8], [1]. Simultaneously, a *”strikingly sharp increase”* in biologically active *protein-bound corticotropin-releasing hormone (CT-RG)* in the amniotic fluid is noted [9], [10]. According to the researchers, this is
the result of the endocrine function of the placenta, and not hyper function of the hypothalamic-pituitary region of the child, since the increase in the level of ACTH in the child’s blood plasma is not detected. His adrenal glands undergo rapid involution after birth, with the cessation of the supply of placental factors [1], pp.170-171.

In our perspective, alterations in the structure and function of the adrenal glands, along with other organs and systems (respiration, circulation, etc.), are intricately linked to the operation of the Genetic Program governing the development and maturation of the child. This very Program not only oversees the preparations leading to birth but also orchestrates the singular process of childbirth itself. Following this pivotal event, the Genetic Program seamlessly guides the child through a swift and successful adaptation to their novel living conditions.

Moreover, in women at various stages of parturition, the expression of specific genes has been identified in multiple tissues, including myometrium tissues [11], [12], [13], estrogen and progesterone receptors [14], intercellular adhesion molecules-1 [15], interleukin-8 [16], 15-hydroxyprostaglandin dehydrogenase [17], prostaglandin endoperoxide synthase 1 and 2 (PTGS1 and PTGS2) [18], protein of myometrial gap channels – connexin-43 [19], and the S100A9 protein, the content of which sharply increased in neutrophils and endotheliocytes of the vessels of the myometrium and cervix, ensuring the seamless progression of childbirth [20].

Considering the framework of wave genetics [21], [22], [23], [24], [25], it becomes logical to posit the existence of a wave interaction between the gene systems of the child and the mother. This interaction manifests in the commencement of parturition (typically around 38-40 weeks of pregnancy) and, on the eve of childbirth, translates into the child assuming a stable starting position (longitudinal position, head presentation), reduced motor activity, and active progression along the birth canal during childbirth—a biomechanical phenomenon (the biomechanics of childbirth) unique to human birth. This nuanced understanding adds another layer to the complexity and beauty of the genetic symphony underlying the miracle of human birth.

**The denervation/desympathization of the uterus**

During pregnancy, there is a known increase in the uterus’s nerve fibers, bundles, endings, and receptor zones [26], [27], [28]. However, histological studies have unexpectedly revealed a sharp decrease in the number of nerve elements in the uterus tissues 2-3 weeks before birth, indicating a denervation of the uterus [29].

Subsequent studies clarified that this process is desympathization of the uterus. Notably, in women during childbirth, «the adrenergic fibers around the vessels and in the thickness of the myometrium in any of the sections of the uterus could not be found» [30].

From this perspective, data from experimental studies on a significant drop in norepinephrine (NE) content in the uterus, especially in the sympathetic neurons innervating the uterus, by the time of delivery, became evident [31], [32], [33]. Neurons still present in the uterus lost the ability to absorb labeled NE by 60%, accompanied by a 90% decrease in tyrosine hydroxylase activity [34], [30]. This enzyme, encoded by the TH gene, becomes active only towards the end of childbirth [35].

Nature’s «intention» behind the desympathization of the uterus can be understood as a dual purpose: protecting the woman in labor from an excessive flow of pain impulses while seemingly aiming to transfer the childbirth process to automatic regulation.

**Automatism of Smooth Muscle Cells (SMC) of the myometrium**

Even in the non-pregnant uterus, the automatism of uterine SMC has been identified [36], [37], [38]. This manifests as multiple zones of excitation in various parts of the uterus at the onset of labor [39]. Gradually, these zones start following a single rhythm emanating from one center – the pacemaker, usually located in the right corner of the uterus [40].

However, when the destruction of sympathetic nerve fibers and nerve endings occurs on the eve and during childbirth, questions arise: What unites the SMC and organizes the rhythmic contractile activity of the uterus?
**The Acupuncture System (APS)**

During pregnancy, scientists observed a pronounced expression of genes encoding **tight junction proteins** - claudin-1 and 2, as well as the **protein of intercellular gap junctions (IGJ)** - connexin 43, in the myometrium [19], [41]. Toward full-term pregnancy, the number of IGJs between SMCs increases, and during childbirth, their number and the content of Connexin-43 sharply increase but it is not detected 24 hours after birth [42].

Three types of contacts exist between adjacent cells: tight (connecting), desmosomes (exchange), and gap junctions. The increase in the concentration of tight junction proteins between SMCs is logical: it is necessary to strengthen the bonds between SMCs, the load on which increases sharply with the onset of labor activity.

Until recently, the role of IGJ in the uterus remained unclear, although researchers noted their increase during childbirth, including preterm labor. Efforts were directed at reducing IGJ concentration to prevent preterm birthing.

Mashansky et al. [43] visualized IGJs through electron microscopy and contrasting, finding a large number of them in places of biologically active points (BAP) on the skin compared to adjacent tissues. IGJs form the **intercellular gap** channels (IG-channels), known as the **Chinese classical meridians**. These channels participate in creating an intercellular network, through which the distribution of auto-wave or induced (by needles, laser) energy information occurs. IG-channels are system-forming elements that provide a qualitative transition from the cellular level of organization to the tissue level [44], [45]. In essence, IG-channels are the basis of the Acupuncture System (APS).

Naturally, the question arises: What kind of wave information moves along the APS?

To answer this question, it is necessary to temporarily depart from the generally accepted framework of medicine and physiology and consider the main provisions of quantum mechanics, the theory of corpuscular-wave dualism, the theory of distant bioinformatic intercellular interactions, and wave genetics. One key point is crucial: *The universal property of Nature is that in the microcosm (molecules, atoms, and below), any substance is simultaneously in the state of both a particle and a wave carrying information about this particle.*

Considering the provisions of quantum mechanics and the wave principle of information propagation - everywhere and in zero time - allows us to understand how all 200 billion myocytes localized in different sections and layers of the uterine myometrium simultaneously receive information and organize the functioning of the uterus with all its components, including the fetus complex. In this case, IG-channels provide functional synchronization of the SMCs of the myometrium [19], [46].

Here it is pertinent to note that, in tandem with this mechanism, the wave flows facilitate the functioning of the woman and her prenate, establishing an instantaneous mutual information connection crucial in the process of pregnancy and childbirth. It’s worth noting that these mechanisms, underlie the mother’s control over the development of the structures and functions of the prenatal child’s organs, his perception of the mother’s thoughts and behavior, and the formation of his attitude to the objects and subjects of the world around them. These mechanisms also elucidate how the obstetric situation, due to the child’s behavioral reaction to the mother’s emotional outbursts, can change dramatically and complicate childbirth (breech presentation, prenate’s transverse position). Furthermore, they are reflected after birth in the child’s relationships with loved ones and behavior in society.

These ideas form the basis of the conception of multilevel wave information exchange between the mother and unborn child, initially published and presented at the International Congress of ISPPM (London 1998) and further developed at subsequent forums of ISPPM and others (2000-2016).3

Consequently, the APS functions in the human body along with the nervous system (NS) and is in constant reciprocal communication with it. Pregnancy and childbirth provide a unique situation in a

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3 The same concepts served as the foundation for the formulation of a method aimed at the verbal-musical restoration of normal labor activity in instances of deviation caused by the acute emotional stress of the mother [47]. Additionally, they underpinned a method for the non-contact correction of the breech presentation to the head presentation in cases of a similar origin [48].
person's life when one regulatory system (nervous) delegates the performance of a crucial, responsible function - the birth of a person - to another (acupuncture), and after this event, within 24 hours, the APS "gentlemanly" returns its field of activity - the uterus - to the NS.

The remote neuro-endocrine regulation of labor
From the description, one might infer that the nervous system is largely disengaged from the orchestration of parturition. Nature, in its wisdom, orchestrates uterine desympathization, reducing elements associated with pain sensitivity, and creating optimal conditions for birth while retaining remote regulatory functions for the nervous and endocrine systems through neurotransmitters and hormones. Genes also play a role by ensuring their perception through protein-coding receptors on the membranes of smooth muscle cells (SMCs) and other cells.

The contractile-inhibitory system is pivotal. Childbirth involves the myometrium's contractile activity, regulated by uterotoxic biologically active substances (BAS) like oxytocin, prostaglandins, acetylcholine, serotonin, adrenaline, nor-epinephrine, histamine, endothelins, angiotensin-II, and the kinin system [5]. These BAS are delivered by the nervous and endocrine organs, circulating blood cells, and fetal structures, with an increase in the number of receptors on the SMC membranes.

Throughout pregnancy, the inhibitory sub-system of BAS functions, including relaxin, atrial and brain natriuretic peptides, prostanoids, protein-bound parathyroid hormone, and corticotropin-releasing hormone (CT-RG, cortico-liberin). This sub-system ensures myometrial relaxation, maintaining uterine inertness and extensibility for fetal egg and prenatal child growth. It continues to function during delivery, providing gentle regulation of myometrial SMC contractile activity.

The balance of BAS in the contractile-inhibitory system is maintained by the accelerated destruction of tono-motor substances using specific enzymes: oxytocinase, prostaglandin synthase, enkephalinase, diamine oxidase, atechol-0-methyltransferase, angiotensinase, respectively [49], [50], [51], [52], [53]. This not only establishes the rhythm of contractions but also safeguards the mother and child from excessive uterine contractions.

That is, during pregnancy and childbirth, the function of the myometrium is under the control of the contractile-inhibitory system. It's surprising to observe a significant abundance of tonomotor and inhibitory biologically active substances (BAS), along with two distinct modes of their operation. This could be interpreted as a manifestation of the duplicate systems phenomenon, guaranteeing the unequivocal accomplishment of the primary objective.

The wave component of these substances' molecules is postulated to be the content of the uterine acupuncture system.

The delivery of these BAS to the uterus remains a question.
But how are these BAS delivered to the uterus?

Vascular pool and blood circulation in the uterus
The uterine wall comprises three membranes: mucous (endometrium), muscular (myometrium), and serous (perimetrium). The myometrium is divided into three layers: internal (sub-mucosal), middle (vascular), and external (supra-vascular). The vascular layer, housing numerous vessels, particularly veins, is notably developed. During contraction, blood flow continues through arteries into the uterus, while venous outflow faces hindrance due to vein compression. At the peak of contraction, blood circulation in the myometrium momentarily ceases. Simultaneously, the uterus seems to elevate, experiencing a slight increase in volume—a phenomenon reminiscent of the "cavernous body" [38].

Many veins collapse during this phase, leaving dilated venous sinuses in the majority of the uterine wall [1] p.26). It is plausible that the blood within these sinuses contains inhibitors aiding uterine relaxation post-contraction.

Now, what is the psychological state of the woman and her child amid these described transformations on the eve and during childbirth?

Psychological state of a woman and her child during childbirth
Scientific studies utilizing electroencephalography in pregnant women on the brink of childbirth reveal a decline in cortical excitability and an upswing in subcortical activity [54]. A notable manifestation of this
shift is what's known as the "nesting syndrome," where women focus on preparing the birthing space and subsequent comfort for the newborn [55].

As childbirth unfolds, women enter a state of altered consciousness. Psychiatric studies [56], [57] indicate that 78% of women experienced sudden phenomena of unusual consciousness states during childbirth and the postpartum period: a subjective sense of profound "joy-happiness," and a mental connection with the child. For some women, vivid memories of their past life and a profound mental connection with relatives were vividly recalled before their "inner eye." In 10% of women in labor, a phenomenon referred to as "going out of the body" was observed. During this state, women experienced a surreal detachment, as if watching themselves and the unfolding events from an external perspective. Those who underwent this "trance" state unanimously reported that it coincided with a complete absence of pain throughout this episode. In the words of M. Odent [58] in the second stage of labor, the state was vividly described as "She flies to another planet."

These altered states of consciousness are likely linked to:

a) **Structural changes in the brain:** Recent studies show a reduction in gray matter volume in brain areas associated with social knowledge during pregnancy. These changes predict postpartum maternal attachment, indicating an adaptive process facilitating the transition to motherhood during pregnancy (Hoekzema et al. 2017).

b) **Psychotropic properties** of substances in the contractile-inhibitory system, along with morphine-like opiates (endorphins, enkephalin) produced by brain neurons. The production of these opiates increases progressively during labor, peaking as the baby passes through the vulvar ring [59], [60], [61], [62].

The mentioned biologically active substances (BAS) form a unique neurotransmitter-hormonal cocktail, contributing to the altered consciousness experienced by women on the eve and during childbirth.

A similar state likely occurs in the prenate due to significant concentrations of his/her own corticosteroid hormones, known for their narcotic effect, and through the wave connection with the mother.

The altered consciousness state in both the mother and prenate is a crucial condition for overcoming obstacles in their psychosomatic interaction during birth. It's important to recognize that these brain transformations, hormone production, and the birthing process itself are not arbitrary—they result from the active functioning of genes located in the nuclei of every cell in both the mother and child. On the eve and during childbirth, there unfolds a deployment inherent in them from the start—the Genetic Program of Birth.

Discussion and Conclusion

In presenting the results of our systematic analysis of numerous publications, we have laid the foundation for a scientifically grounded Theory of Parturition. We extend our sincere gratitude to the scientists, whether directly quoted or not, whose contributions played a pivotal role in shaping this theory, in compliance with regulations and ethical considerations.

While the compelling data convincingly portray childbirth as a painless process, it's undeniable that some women, having experienced pain during childbirth, may hold a different perspective due to their individual experiences and choices, including the use of pain relief. This warrants an explanation.

We aim to explore this aspect collaboratively with the renowned American neuropyschologist, neuropsychologist, and biochemist Joe Dispenza [63]. According to Dispenza, our perception of reality is often shaped not by the objective truth but through the interpretation of pre-existing mental images.

To elaborate, these mental images are imprinted in our genes, carrying information inherited from our ancestors and accumulated through our life journey, starting from conception. This genetic information encompasses both positive and negative impressions. As the socio-psychological environment around us constantly evolves, triggering diverse emotions and thoughts, even when alone, we remain under the influence of our thoughts.

As per Dispenza's perspective, "Thought is prior to matter." If we dwell on negative thoughts, our brain perceives them as reality, leading to corresponding changes in the body, such as illness, fear, depression, or bursts of aggression.
To clarify further, if a woman consistently believes childbirth is painful, these thoughts become her perceived reality, shaping her experience during childbirth. This concept extends to professionals who empathize and offer assistance. However, with the introduction of the Theory of Childbirth, there exists a remarkable opportunity for conscious reprogramming of thought patterns.

According to Dispenza, confidently embracing information about the organization of childbirth generates new thoughts, leading to new choices, behaviors, experiences, and emotions. This, coupled with fresh thoughts, contributes to the modification of genetic content through epigenetic mechanisms. In essence, this process nurtures self-esteem, fosters self-confidence, and offers the chance to transmit this transformed information to the unborn child.

The presented data underscores the comprehensive involvement of practically all organs and systems in a woman's body (endocrine, circulatory, sexual, etc.) in childbirth organization. These are governed by regulatory subsystems—nervous and acupuncture—in constant reciprocal communication. The orchestration of this multifaceted structural and functional ensemble is guided by the gene system, encapsulated in the genome of each cell in the bodies of both individuals.

The clear sequence and timed intervals of events signify the existence of a Reproduction Program innately embedded in the genomes of the mother and child. The coherence of its functioning aligns with the wave-based "communication" between mother and child, consistent with the principles of quantum mechanics and wave genetics. This collectively reinforces the professional viewpoint that, from conception to childbirth, the mother, child, and fetal egg elements (placenta, membranes) form a harmonious functional unity.

In essence, the birthing process is orchestrated and governed by the heightened activity of two gene systems, meticulously coordinated by the expression of numerous genes from both the child and the mother. These systems are intricately designed to fulfill several pivotal tasks:

a) Establish optimal conditions for the development of the fetal egg and the child within it, simultaneously preserving the mother's psychosomatic state by instilling positive feelings of dignity, pride, confidence, and joyful anticipation.

b) Initiate transformations in both systems at the stage of the child's maturity and readiness for extraterrestrial functioning, typically 2-3 weeks before birth, culminating in the formation of a multi-component Parturition System.

c) Ensure the seamless, problem-free birth of the prenate through the natural birth canal, aiming for a process that is minimally traumatic and as painless as possible for both mother and child.

d) Create conditions for the timely restructuring and adaptation of the mother and child, starting from the moment of birth and extending beyond.

Childbirth, or more accurately, "Birth," is not merely a physical event but a genetic and psychosomatic phenomenon involving a woman-mother and the child, where the child holds the honorable right to the initial impulse. From this perspective, it seems logical to revise existing notions:

Birth is a unique event in the life of a family and society, transpiring in a distinctive ecological and psycho-social environment characterized by its cultural, religious, ideological, and economic features that reflect various aspects of civilization.

Despite civilization's positive contributions, it has significantly altered what nature originally designed for the entire reproductive process. A consequence of this negative impact is the pervasive fear of childbirth. Studies show its prevalence in primigravida in each trimester, with 34.7% expressing increased anxiety as the birth approaches. Many opt for caesarean sections and pain management [36].

To this, it's crucial to acknowledge that fear disrupts the psychosomatic well-being of women, leading to various complications during pregnancy and childbirth. Equally significant, it stands as a leading cause of prenatal and perinatal psychosomatic trauma for the birthing generation.

Therefore, specialists today face the imperative tasks of:

a) Introducing new theoretical knowledge about the birthing process to society.

b) Engaging cultural and medical workers, public figures, the media, and the internet in this discourse.

c) Establishing Educational Schools for pregnant couples, focusing on the psychological preparation of pregnant women based on this new childbirth theory.

d) Creating specific (intimate) conditions for delivery, guided by a trained midwife.
Future studies may uncover additional facts about parturition regulation, but even with the current data, we have ample understanding of the direction in which we should develop preventative measures to contribute to the birth of a mentally and somatically healthy generation. This realization aligns beautifully with the Birth Program encoded in the genomes of the child and the mother!

REFERENCES


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