

Maternal Fright and South Slavic Oral Memory Traditions: Biosemiotics, Epigenetics, and Somatic Psychobiology Healing Practices

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Abstract: The Slavic term “maternal fright” is carved from chronic wars and violence towards women and is a form of transgenerational trauma. The forgotten conflict, the Balkan War of 1991-95 in the former Yugoslav region, resulted in South Slavic female survivors in the aftermath of war utilizing extensive cultural practices including oral memory traditions to ameliorate their experiences of trauma with greater focus on eradicating maternal fright. This review of interdisciplinary fields from biosemiotics, epigenetics, perinatal psychology, oral memory theories, and neuroscience is used to frame the survivors’ trauma as intensified learning and a space and place for healing. The tacit female knowledge embedded in South Slavic oral memory traditions connects to complex biologically aligned practices. For example, the body clock, or circadian rhythms, are regulated with oral memory practices to maintain and heal trauma.

Keywords: maternal fright, oral memory traditions, healing practices

A thin Bosnian-Herzegovinian pregnant woman in her late twenties had big dark circles under her eyes; her hands shook even at rest. When she began sharing her maternal fright, she released expressions that were formerly deliberately hidden and avoided. The fear and trauma is acute and chronic since the South Slavic, former Yugoslavian peoples, have endured a century of wars, including World Wars I and II and the Balkan War.

For sixteen years, I have been working extensively with the Bosnian-Herzegovinian women who are survivors of war and war crimes in the

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aftermath of the Balkan War (1991-1993). I will discuss my perspective on how maternal fright is the embodiment of transgenerational fear and trauma through female neurobiological processes (Anderson, 2014; Christie & Pim, 2012).

I observed that the South Slavic women war survivors were focused on healing the effects of violence. Based on the numerous interviews and sessions with the survivors, I noted how their healing from violence does not follow the sequence listed and studied in historical and scientific pages for female war survivors and victims of war crimes. Instead, their looming maternal fright and a lack of medical and psychological support by aid organizations prompted the war crime victims and war survivors to produce a sequence of responses focused on resolving the consequences of violence felt in the womb and the corresponding relationships (Anderson, 2015; Garcia-Munoz, Neuman, & Neuman, 2014).

The healing process involves fundamental biological processes that include biosemiotics, neurobiology, physiology, somatic psychology and movement therapies, and their effects in pregnancy. The reasoning held by the survivors was universally stated as the key for generating healing functionality. More specifically, the survivors added a very detailed feature of healing that holds that the female biology is the key to the inter-relationships (Porges, 2001; Silva, 2014).

Maternal Fright: Common in Modern Wars and Violence

The Slavic term “maternal fright” is carved into our modern era of man-made wars and violence and is a common consequence of the forgotten conflict, the Balkan War of 1991-95 in the former Yugoslav region (Anderson, 2015; Christie & Pim, 201; DeMause, 2006). Maternal fright can be traced to prehistoric times. Traumatic events and natural disasters or crises that occurred in prehistoric eras resulted in survival memories, which were transmitted across generations to ensure species’ survival. In modern times, survival memories are a result of a world of violence and wars (Buss & Plomin, 2014). It has been proposed that epigenetic processes have shaped human DNA from prehistoric times to the present and that maternal survival memories are heritable in this way (Jablonka & Raz, 2009).

In theory, maternal fright causes transgenerational anxiety disorders and a host of mental and physical illnesses, which especially impact the perinatal and early life development of the child. It is also important to note the cost of femicide when maternal nurturing and transgenerational memories are eradicated due to violence (Singer et al., 2003). For South Slavic women in particular, the century of wars and war crimes (WWI,

WWII, and Balkan War) has led to maternal fright becoming a part of their oral memory traditions and practices, possibly to ameliorate the devastating impacts of trauma.

Maternal Fright Affects Gene Expression

Considering that mothers pass both epigenetic influences as well as oral traditions to their children, it is not surprising that, in the world of violence, maternal fright, which theoretically affects gene expression and is set in memory, would be passed down through generations (Kaitz, Levy, Ebstein, Faraone, & Mankuta, 2009). Expressions of violence against women, a conveyor of maternal fright, is seen in wars, domestic violence, sexual assault, and homicide (Wood, 2006). All have catastrophic consequences, but one United States statistic that stands out is that the leading cause of death for pregnant mothers is trauma that involves strangulation, which is most often committed by women's partners (Falb et al., 2014; Fildes, Reed, Jones, Martin & Barrett, 1992). According to the 2011 statistics, the seventh leading cause of death for women is femicide, or the murder of women (Van Wormer & Roberts, 2009; Wilson et al., 2011). For African American women and Native American women, femicide is the second leading cause of death (Wilson et al., 2011). Considering that the escalating civilian fatalities in wars since WWII are mostly women and children, the battlefield appears to be located in wombs and homes (Mertus & Benjamin 2000). These statistics suggest that maternal fright is a common occurrence across diverse ethnic groups (Amoakohene, 2004).

Oral Traditions: Related to Female Biology

Female Balkan War survivors stated that the reason they are so attuned to female biology and cultural practices was the proliferation of fear and trauma that has taken over their oral memory traditions and their capacity to manifest culture. From women's point of view and based on life experiences for the past three generations, female biological processes such as menstruation, pregnancy, and giving birth were targets in wars and violence in the form of forced pregnancies and rapes. The war survivors frequently remarked on life's activities, explaining how living systems need to behave as nature and biology do in order for healing to take place in a deeper sense (Anderson, 2015; Hoffmeyer, 2008).

More importantly, these women had a tacit knowledge (internalizing knowledge of the parts so that we can "get" the whole) that the roots of culture are biological in nature and are neurologically aligned with

movements found in life experiences of one's ancestors and the mother's life (Wheeler, 2006a; 2006b). In this regard, a mother's manifestation and transmission of culture, such as in regard to perinatal states and child rearing, are based on the physical body of a woman that cannot be separated from her life experiences and thus shape DNA and gene expression (Merleau-Ponty, 1995/1968; Rossi, 2002).

The term maternal fright needs to be defined from a female tacit knowledge approach (Hoffmeyer, 1996; Polanyi, 1966). Female tacit knowledge represents "the bodily roots of our knowledge of [wo]man's highest creative powers" (Polanyi, 1966, p. 15), based on the biological fact that we are all born of a woman. It is important to note the difference between female tacit knowledge and that of maternal fright, which is an outcome of escalating manmade conflicts, wars, and violence where the female body and womb are targets of bodily assaults such as harm, sexual assaults/rapes, and femicide. A woman's stories and experience as a victim of violence have historically been the only expression allowed and studied. According to medical and scientific disciplines, female tacit knowledge is disavowed as nonsensical and even superstitious. This is due to reductionist methodologies that do not take in the whole and reduce down to parts; thus, according to authorities in the medical and science fields, female tacit knowledge is not grounded in fact and reality (Hoffmeyer, 2008; Wheeler, 2006a; 2006b). The divisive difference between these concepts is best acknowledged by the scientist Longino, who wrote, "Men occupy a position of entitlement to women's bodies" (Longino, Alcoff, & Potter, 2002).

Given that maternal fright erupted from the ongoing violence, violence has become transgenerational through the South Slavic female-oriented perinatal oral memory practice (Anderson, 2014; Christie & Pim, 2012). Since oral memory traditions and practices are based on our ancestors' daily life being preserved in the stories (analogical and semiotic in nature) passed to subsequent generations, the repeating behaviors can shape gene expression over several generations (Gericke, 2006). Through this process, it is theorized that oral memory traditions shape the body's biological and neural code (Hoffmeyer, 2008).

There are three properties of oral memory traditions. The first property is that memory traditions passed on to future generations manifest culture through the development of the fetus and child rearing. The prenatal and perinatal stages represent the beginning of life with the encircling, self-organizing membranes (Kull, Emmeche, & Hoffmeyer, 2011). Researcher Sue Gerhardt has suggested that babies represent not only a genetic blueprint, but a genetic/environmental combination, in which the baby and the nurturing care it receives are an inseparable

whole (Gerhardt, 2006). The second property of memory traditions is that they evolve through repeating practices focused on epigenetic inheritance systems arrayed in behaviors and movement that shape DNA (Hoffmeyer, 2008; Hollick, Dorweiler, & Chandler, 1997). These are known as epigenetic influences, are transgenerational, and are the proposed mechanism by which external stimuli influence behavior (Gericke, 2006). The third property of memory traditions is that they proliferate what Knight (2013) called *culturgen*s, or *memes*, which is the mapping of cultural units.

It can be said that oral memory traditions are centered on female collective evolution since female biological processes coupled with the memories are passed down the generations through behavioral changes. What is being described centers on Lamarck's theory of inheritance of acquired characteristics which was vehemently rejected by scientists until the 21st century. Lamarck's inheritance of acquired characteristics theoretically is about the adjustment of gene expression changing our DNA (Youngson, & Whitelaw, 2008). The cultural genomics in South Slavic oral memory traditions and practices encompass transgenerational knowledge, which evolves by layering each generation's repeating behaviors to change from surviving to thriving (Barr & Skrbiš, 2008). This transgenerational nature of prenatal and perinatal oral memory practice and its corresponding gestational vulnerability has become the target of wars and violence. Thus, the South Slavic women survivors, as a female collective, are grappling with the psychobiological and neurobiological impacts of trauma to transform the transgenerational gynocidal implications with their oral memory practices (Anderson, 2014; Anderson 2015; Christie & Pim, 2012).

The lack of healing practices resulting from trauma is noted in the field of somatic psychology in a study by Ogden and Minton (2000) which has shown that the "traditional psychotherapy addresses the cognitive and emotional elements of trauma but lacks the technique that work directly with physiological elements, despite the fact that trauma affects the body and many symptoms of traumatized individuals are somatically based" (p. 149).

According to Yi-Fu Tan, "if space allows movement, place is a pause and body is 'lived body' and space is humanly construed space" (Christie & Pim, 2012, p.287). The young and pregnant women possess a remarkable knowledge that Mother Nature is hard at work to take and form habits, processes involved in biosemiotics. Women's understanding and female tacit knowledge that the womb is a space in the female body and the biosemiotic focus of the South Slavic women support the concept that the body can instruct the mind (Christie & Pim, 2012 p. 285).

Hoffmeyer quotes Brooke Williams, from the Semiotic Society of America who states every movement needs a symbol to grow. “A sign of a sign, the caduceus, the staff of a messenger bearing a message.” (Hoffmeyer, 2008). Given that biosemiotics, life/signs-of-life/life-of-signs have a universal perinatal relevance, Lotman, a Russian-born Estonian semiotician coined the term “semiosphere,” which for the purposes of this paper, recognizes the ecosemiotic niche conditions found in the womb (Hoffmeyer, 2008).

The biosemiotician Jesper Hoffmeyer defined biosemiotics as an interdisciplinary scientific project based on the recognition that life is fundamentally grounded in semiotic processes (Hoffmeyer, 2008, p.3). The semiosphere is a recognized cultural concept, since the semiosphere is the semiotic unit of measure with the outcome of the development of culture—the totality and organic whole of the living matter and the conditions for the continuation of life (Verdansky, 2012). The semiotic unit of measure is mirrored in the applied oral memory traditions and practices (Lotman, & Shukman, 2000). For example, author Husslein (2013) studied patterns in the oral memory traditions, the Gregorian chant melodies, where the meter self-organized into mensural units giving the chants a pulse.

Oral memory traditions are fundamental for South Slavic memory practices because the somatic psychobiology and biosemiotics (inclusive gestalt) involve “actions created, repeated, reproduced and elementally charged through meaningful agency” (Christie & Pim, 2012, p. 287)

Oral Memory Traditions are Epigenetic

Oral memory traditions include epigenetic behaviors, which are repeated and lived daily and continue to be practiced by the future generations. A new field of behavioral epigenetics is catching up to the tacit knowledge—we know more than we can tell—in oral memory traditions.

Considering biosemiotics, bio-life and semiotic-signs, we can further connect the relationships of nature/nurture with biology. Szyf, a molecular biologist, and Meaney, a neurobiologist, postulated that if diet and chemicals can cause epigenetic changes, certain experiences such as child neglect, drug abuse, or other severe stresses can also set off epigenetic changes to the DNA inside the neurons of a person’s brain (Hurley, 2013). Rossi (2004) states, “molecular mechanism of rehabilitation via activity-dependent gene expression facilitates gene expression, brain plasticity into newly functioning tissues through activity-dependent cognitive-emotional-behavioral experiences as the basic mechanism for healing” (p. 25).

Children Remember What Their Mothers Remember

Mothers' experiences have a profound effect on the development and the life of a child (Hesse & Main, 1999; Wadhwa, 2005). These experiences are passed on to the child through oral traditions that relay events and experiences through social interactions (Kaitz, et al., 2009; Schore, 2001). In addition, epigenetic processes, which are influenced by maternal experiences and the environment, affect gene expression in the fetus (Champagne, 2010). Given that the transmission of maternal life experiences and memories shapes our species' genes and behavior, we can observe how maternal daily life experiences and those repeated over time are preserved in oral memory traditions, and how a science of rituals plays into biological rhythms and cycles. Tacit knowledge and life experiences are passed down to future generations both orally and genetically (Wheeler, 2006a; 2006b; Polanyi, 1969). For instance, it has been shown that babies inherit fear and instincts (Hodgson, 2004).

Slavic oral memory traditions are centered on the mother (Anderson, 2015; Christie & Pim, 2012; Slapšak, 2005). Mothers aid the transmission of culture by passing down survival and thriving skills through chants, dance, bioculinary practices, and art (Hanna, 1987, Parncutt, 2009). By communicating with the infant, the mother influences the child's language capacity and the resulting library of ancestors' life experiences and memories (Bates, 1979).

Welldon purported that the quality of female biology and the body is critical for women's psychology, explaining how violence and wars target female biology and bodies, since women birth their own creations (Fonagy, 2010; Welldon, 1992). For much of one hundred years, during WWI, WWII, and the Balkan War in the former Yugoslav region, the women survivors led their domestic lives and performed repetitive acts that sustained them and their families (Anderson, 2015; Christie & Pim, 2012). As a result, from a psychobiological perspective, their South Slavic oral memory traditions proliferated a variety of practices and traditions that aimed to heal and prevent maternal fright from infecting future generations (Anderson, 2014).

Maternal Fright can Change a Child's Genes

In the modern age, trauma induced by conflicts, wars, and weapon violence theoretically affects epigenetic processes, thus targeting women's capacity to manifest culture. Culture's roots are biological, as is the mother. Female uterine endowments are absent from the male body and the uterus as an organ is wholly female. The uterine endowments carry

intricate biological processes interconnected with emotional states and cues to fight or flight responses. What is understood about the uterine environment is that the fight or flight response ensures the survival of the species but, more importantly, that the transmission of maternal life experiences and memories shape gene expression in future generations (Hastie, 2008; Hesse & Main, 1999; Kaitz et al., 2009).

Maternal fright resulting from human violence leads to epigenetic inheritance of negative experiences. An environment of war and violence can influence genetic factors passed from the mother to the child, leaving a legacy of mental and health impacts (Van den Bergh, Mulder, Mennes, & Glover, 2005). Just as the uterine environment is fragile, absorbent, and pliable, the world the mother resides in also influences the interplay of biology, nurture, and nature. A child's development and gene expression are sensitive not only to the uterine environment, but also to the maternal environment and her life experiences. Maternal fear and anxiety pose a risk of serious physical and mental problems for both the mother and the child (Van den Bergh et al., 2005). It has been shown that the mother's anxiety and stress that elicit strong emotional experiences can increase the risk for spontaneous abortion and preterm labor, growth retardation, and reduced head circumference in infants (Mulder et al., 2002).

Insight into epigenetics is a part of my daily work of carving out memories. The science of memory and epigenetics is concerned with how the mundane and ordinary things are perceived and how they influence us (Candau, 2010). Our daily actions provide the basis of these sciences and every movement repeated by mothers becomes embedded in memory and becomes a transgenerational conductor (Anderson, 2015; Christie & Pim; 2012; Ward 2008). Essentially, mothers' experiences (female biological tacit knowledge) can influence epigenetic processes and fine-tune gene expression in the child (Ollikainen et al., 2010).

Research has shown that maternal fright and trauma can cause transgenerational epigenetic changes (De Mendelssohn, 2008; Elmwood, 2008) and that traumatic experiences can be passed down through DNA (Carey, 2013; DeMause, 2006). The mother's memories and life experiences are remembered by the children at a basic level, and can lead to tragic consequences in their developing brains and bodies. In other words, the wars and violence perpetrated onto the mother and the environment are unending thus easily influencing epigenetic processes shaping our DNA.

Experiences of our ancestors, mothers and grandmothers, can change gene expression and by the same biological mechanism, maternal fright prorogates an assortment of ills. According to Kandel's work on the neurobiology of memory, new memories are layered over the original ones

(Eichenbaum & Fortin, 2009; Kandel, 2007). Research has shown that the same process plays a role in passing down genetic diseases and programming, such as Rett syndrome and severe autism (Miles, 2011).

This continues to be observed by the South Slavic women war crimes and war survivors after a century of wars. Through an epigenetic process that originates in the pre-conception stages of the mother's and father's life experiences, and prenatal, perinatal, and early childhood development, the life experiences of grandmothers become embedded into memories of grandchildren (Anderson, 2015; Burton, Barker, Moffett & Thornburg, 2010).

Oral Memory Traditions are Closely Intertwined with Biological Rhythms

What I have observed and researched in regards to healing women's trauma are the oral memory traditions, which are found to be in sync with the maternal biological rhythms (Anderson, 2014; Hannon & Johnson, 2005). The development of culture's cradle is the semiosphere where the emergence of life consists of encircling membranes in its self-organizing states, or storied developmental prenatal and perinatal stages, that is, female biology twined with nature (Sebeok, 2001). I consider the oral memory traditions to be the translation of neural codes defining the self-organizing states producing iconic epigenetic narratives, stories, and mythologies inclusive of female biology and the diversity of nature. The oral memory practices are as a result loaded with analogy and semiotics such as ballads, chants, and dances to rituals of daily life practices (Kull, Emmeche, & Hoffmeyer, 2011; Roesler, 2012).

Carl Jung discussed how culture is a part of human nature (Jung & Von Franz, 1968). What is not included in Jung's theorizing is the reality that culture is rooted in female biology and her nature (Mies, 1998; Tannen, 2014). Maternal biological rhythms form oral memory traditions via repetitive life practices and life experiences. In essence, oral memory traditions preserve the knowledge of biological processes of conception, pregnancy and birth without written manuals; these are transgenerational layered membranes of culture. These traditions are what I refer to as female tacit knowledge (Gifford, 2010; Wheeler, 2006a; 2006b). The structure of maternal biological rhythms and processes entail processes from menstruation to menopause (Bledsoe & Banja, 2002; Bateson, 2001), but none are as critical to this paper as maternal fright and the focus on prenatal and perinatal stages.

I have also noted how oral memory traditions house an archetypal constellation of life experiences and concepts of epigenetic propensities

and neuroscience provide venues for clarifying how female social collectives are distinct from the assemblies of traumatized individuals (Anderson, 2014). In female social collectives, the biological roots of nature are represented in the oral memory traditions practices—a group culture that is vastly different from isolated traumatized individuals (Freudenberg & Jones, 1991). Yet, in the female social collective, oral traditions are treated as harmless folklore not worthy of science or governing entities (Alexander, Eyerman, Giesen, Smelser, Sztompka, 2004; Grünberg, 2009). In fact, female social collectives are to proclaim nonpolitical status so as to not offend men and powers that be.

While inheritance of personality traits and temperament is controversial, behavioral genetics and gene-environment interaction studies show a correlation to oral memory traditions practices, a science of rituals (Steinberg, Vandell & Bornstein, 2010). Before the alphabet and written words, pre-literate cultures used repetition to pass down storied instructions, which became encoded into memory.

The maternal uterine environment is rarely included in research. But, a compelling concept is that the fetus in the womb is vulnerable to the mother's natural rhythms of temperature, food/nutrition, and melatonin prompts a deeper inquiry regarding maternal uterine environment. For example, maternal melatonin is one of few hormones that remains in its chemical state without being altered in the blood that synchronizes the fetus' rhythms to those of the mother producing the semiosphere (Hoffmeyer & Kull, 2011; Serón-Ferré et al., 2012). By thriving in the uterine environment, the fetus develops and eventually transitions into being a thriving newborn, a member of a future generation. Without maternal fright, the uterine environment returns to a state of equilibrium “effecting social change evolving greater cultural evolutionary complexities” (Wheeler, 2006a). Since culture rooted in biology is geared towards co-evolution of culture and society, it allows for the healing practices of the South Slavic women's oral memory traditions to take place.

Maternal/female tacit knowledge is based in the body. Female experiential knowledge is the foundation in the oral memory traditions and is associated with the fractal geometry of complex systems (Polanyi, 1966). Fractal geometry has been shown in the vast natural creative forms, from coastlines and trees to the body, blood, brains, and lungs (Briggs & Peat, 1989). For example, studies of the fetal brain involve fractal dimensions to measure the increases in vessels calibers. The most rapid growth in fractal dimensions is in the 6th and 7th month of gestation and is an effective tool to measure the structures of the brain vessels (Kedzia, Rybaczuk & Andrzejak, 2002).

Given that the growing embryo has the capacity to respond to relevant stimuli, the process we see is a self-calibration process to garner the necessary protein resources to activate the genetic library. Since maternal/female tacit knowledge has existed since prehistoric times and is embedded in female collective memory recorded in genetic expression, the oral memory traditions are the same self-organizing interaction with their environment found in the growing embryo (Polanyi, 1966; von Bertalanffy, 1968; Wheeler, 2006). Maternal tacit knowledge from millennia of life experiences led to the development of oral memory practices before the reign of wars and violence five thousand years ago (Eisler, 1991; Wheeler, 2006a; 2006b).

In fact, this embryogenesis process is quite old. According to research the maternal inheritance and bottleneck effect during the early oogenesis, the female germline mitochondria DNA (mtDNA) and the heteroplasmy has been inherited for at least 30 million years (Doublet, Souty-Grosset, Bouchon, Cordaux, & Marcadé, 2008). Oogenesis sequential process involves mitosis, meiosis, and cellular differentiation. We can see with maternal tacit knowledge and the biological embryogenesis process, this long duration shows how mothers certainly influence the fetus and survival chances of their offspring in many methodologies largely found in the oral memory traditions (Hoffmeyer, 2008).

Recent exosome research by Cossetti, Lugini, Astrologo, Saggio, Fais, & Spadafora (2014) on spermatozoa has shown histone modifications gene silencing via methylation is transgenerational, however, it does not change the primary DNA. Rather the RNA based information is transcriptase (a biosemiotic function) into DNA and our germline cells. Exosomes are mediated information and not restricted to one area. Since research shows sperm-delivered sequences are extrachromosomal, thus sexually transgenerational, exosome mediated information occurs at the point of fertilization inserting a phenotypical modification to the next generation (Cossetti, et al., 2014; Sharma, 2015).

Maternal fright is the interruption of female rhythms (menses, pregnancy, and menopause) according to Slavic oral memory traditions. The same conclusion is shown in Luce Irigaray's psychoanalytic and rule of law research that cited rape as the interruption of female rhythms (Rodgers, (2014). In fact, three feminist maternal theorists Julia Kristiva, Luce Irigaray, and Helene Cexaus cite; "Motherhood is a potential source of power in terms of female creativity and the challenges that the maternal poses to traditional notions of autonomous and unfed masculine subjectivity and the monolithic structure of patriarchal society" (Rodgers, 2014, p. 376).

Maternal fright threatens and destroys the integrity of transgenerational passing of information exosomes via DNA since what the mother's life experiences lived influence and shape biological destinies of future generations. Maternal fright exploded to new heights during the Balkan War in the numerous rape camps (Anderson, 2015). With the current research that somatically acquired genetic variations are transmitted to the germline, the female's rhythm and right to choose sexual partners, to become pregnant or not are basically hinged on "all the moment to moment decisions [that] impact the biological destinies of [her] biological offspring" (Cossetti, Lugini & Astrologo, 2014).

Maternal Fright Changes Circadian Rhythms

Women who are war survivors have reported that their circadian rhythms were disrupted, and they were unable to return to an adaptive state. These women also reported an inheritance of maternal fright (Christie & Pim, 2012, Anderson, 2015). Through their oral memory traditions that involved an interaction of rituals with bio-neurological and epigenetic processes, the women survivors understood that their natural circadian rhythms could maintain and even restore health, thus eradicating maternal fright (Szyf, 2015).

More importantly, the female tacit knowledge, evolving over thousands of years, appears to depend on the rhythm and synchronization of the body clock, which is universally based on light and dark cycles. Circadian misalignment disrupts physiological rhythms, negatively affecting bodies and health, resulting in conditions such as diabetes, obesity and heart problems, let alone the epigenetic processes that result in maternal fright (Laber-Warren, 2015).

Such female tacit knowledge is encased in the Slavic oral memory traditions and practices to heal the circadian misalignments disrupting physiological rhythms not just in current generations but for future generations. Food and herbal remedies, the folkloric food as medicine—what we term as bioculinary and nutrigenomic—continues to prevail for the Slavic women despite the science disciplines shunning their practices and female tacit knowledge. But the current exosome research confirms their traditional folkloric medicinal uses. Since the recent exosome research disproves Weismann barrier principle stating that somatically acquired genetic variations are not transmitted to the germline, maternal fright according to Slavic survivors of WWI, WWII, and the Balkan War point to the numerous inherited physiological rhythms from their grandparents due to the starvation and the inability to grow food due to their entombment in basements and covered and concealed windows in

their flats to avoid snipers for years. Maternal fright killed many during the century of wars while carving future generations' biological destinies (Bahtijaragic, Dhakal, & Pim, 2015; Cossetti, et al., 2014).

Oral Memory Traditions and Healing Practices Resulting from South Slavic War Crimes and War Survivors' Maternal Fright

Maternal Fright in South Slavic Women

The effects of maternal fright and oral traditions are especially prominent in South Slavic women. The young pregnant woman war survivor rubbing her swollen belly understands that her womb is the place of targeted violence, thus producing what South Slavic women name as maternal fright. Maternal fright is transgenerational and uniquely sensitive to fear and the resulting traumas. Before the epoch of human violence, natural disasters and life's crises were the only intensified learning environments that induced transgenerational epigenetic changes of South Slavic oral memory traditions. These events manifested a culture of thriving and not just surviving. However, with the development of violence, culture and the resulting oral memory traditions that once manifested thriving were exhausted and faced destruction as a result of modern era of fear, fright, and trauma.

Maternal fright is contagious, the Bosnian-Herzegovinian pregnant woman told me, pointing to my shaking hands (Anderson, 2015, Christie & Pim, 2012). I had just finished an intense learning session with the community's elder women, which involved dancing kolo, the folk round dance, and feasting. The women directed me to go to the pregnant woman's apartment immediately afterwards.

Staring out the window, the pregnant woman shared how her husband lost 18 relatives in the Ahmica-Vitez genocide on April 16, 1993 (Anderson, 2015; Christie & Pim, 2012). Her husband's family lived in a farming community and "...on April 16, 1993, 150 Muslims in Ahmica-Vitez, mostly elderly and children as young as infants were slaughtered by Croatian war criminals during the Muslim early call to prayer" (Anderson, 2014; Christie & Pim, 2012). Though the young couple lives in Novi Travnik, Bosnia, around five kilometers away, it appears that the inflicted trauma roams across vast distances, as evidenced by her trauma, and that of other women.

After an hour of sharing how she felt her husband's fears were affecting her pregnant womb, thus the fetus, the expecting mother asked what to do to protect her unborn child from her maternal fright. Her next movement was second nature for Slavs in that she was seeking a tradition

or ritual to practice. Since there was no oral memory practice to prevent an unborn child from the transgenerational trauma of maternal fright that resulted from violent genocide, gynocide, and rapes during the war, she was about to create a ritual to fill the void.

When she took a green magic marker that I had placed on the kitchen table with an art pad in the beginning of her sharing, I thought that she was going to draw what she could not say in words. But instead of drawing on the art paper, she used the green marker to draw a spiral on her pregnant belly. Starting from her belly button, she carefully and slowly etched the spiral in concentric circles, enveloping her swollen belly. When she finished, she expressed what appeared to be Slavic thaumaturgy (miracle making) that she had added a new ritual and practice to the Slavic oral memory traditions to eradicate maternal fright.

South Slavic Children are Affected by Maternal Fright

I have observed many Bosnian mothers and their children unable to circumvent the transgenerational trauma or to eradicate maternal fright. More than 20 years after the Balkan war in Bosnia-Herzegovina, many young children display transgenerational trauma as if they had been alive during the war. Through the years, I was involved with projective art for an elementary school. The children's pictures often showed guns, murdered family members, and dismembered bodies. I wondered how these young children could know the violence that was in the past. What I was witnessing was epigenetic transgenerational maternal fright: children reliving their mothers' traumatic life experiences.

I observed the epigenetics of trauma in one young child, approximately five years of age, as she stood in the small playground at the bottom of a dull, war weary apartment. She stood alone in the playground as if frozen, with a posture assumed by many parents who stand alone and watch the children play. Her father noticed me looking at his daughter, walked over to me and started sharing what happened to her mother. He said that one early morning, soon after he left for work, his wife jumped from their flat's tiny balcony to the pavement below. The child was a few months old when her mother flew off the balcony. None of the neighbors knew what had happened, which meant the infant was alone for hours before the mother's body was noticed on the apartment building's wood pile. Immediately after being notified, the father went to check on his infant. The daughter was so exhausted from crying and hunger, very desperately quiet and not moving, frozen from the cold apartment, he said.

The father went on to state that his wife's death was listed as an accident. But, he said, he had heard of too many accidents of tripping off the flat's balconies to believe it was an accident. He asked why a young mother would leave her daughter and him. Many mothers in Novi Travnik and Travnik, like the 4,000-year-old Bird Goddess artifacts strewn in the former Yugoslavia, flew off their balconies to their deaths. All were listed as accidents according to the father. In support of the father's statement, every one of my interviewees over the past sixteen years with the families whose female caregiver died from "accidental" tripping off balconies and windows reported the same disbelief of naming their deaths as accidental (Anderson, 2015).

The South Slavic oral memory traditions rooted in somatic (living body) psychology and psychobiology suggest a psychobiological pathway that underlies the interplay of genes and environment, which is related to neurobiological processes (McGowen, Meany, & Szyf, 2008).

Our ancestors' experiences found in oral memory traditions have never been exposed to the violence against female bodies and gestation at the frequency observed in modern times. The fact that parents' life experiences will be lived by their grandchildren presents an argument for healing trauma and eradicating violence starting in the prenatal period, if not earlier stages. The South Slavic women who were victims of war crimes and war survivors are facing a seemingly impossible obstacle that as creators of culture and having the oral memory practices, they are devoid of ways and means to rid maternal fright. However, the epigenetic transgenerational nature of oral memory traditions has provided the survivors a platform to discovery to find meaning in catastrophic trauma and practices that halt violence.

South Slavic Women Use Rituals to Heal from Trauma

The African saying "it takes a village to raise a child" reflects the female social collective and inter-related female kinships and serves as evidence that the cultural environment influences development (Rosaldo, Lamphre & Bamberger, 1974; Van Anders, 2014). The female social collective includes men, never excludes women, and remembers the children (Young, 1994). Imprisoned women held in isolation lack this social collective and traumatic events associated with these conditions that can shape epigenetic processes.

For the South Slavic Bosnian women war survivors, memories have been carved from violent epochs and perhaps a healing element will be passed to future generations. Of three million refugees in the Balkan War who left with nothing but a suitcase, 80% were women (Mertus, 1997).

This high concentration of women resulted in a vast female social collective that is able to institute beginning steps to heal maternal fright (Mertus, 1997; Anderson, 2015).

What is so resilient and resourceful within the South Slavic oral memory traditions that they continue to be perpetuated throughout the generations, despite the numerous wars, conquests, or other formidable obstacles (Anderson, 2014; Christie & Pim, 2012)? The answer leads to the oral memory tradition, the kolo, to be in a circle or a folk round dance. The kolo is a practice that mirrors biological rhythms and entrains our circadian system to synchronize not just the mother and fetus but the social collective in the dance or circle. With the Bosnian women who are victims of war crimes and war survivors, the use of the kolo was employed as the beginning of healing. Since maternal biological rhythms hold similar patterns to fetal circadian rhythms, they evoke emotional states. I posit that maternal circadian rhythms are essential for the developmental of fetal brain functions (Reppert & Schwartz, 1984). Given that the fetus responds to cues from the maternal signals, and that the fetal circadian rhythm corresponds to the mother's, conceptually the arrangement of the mother and uterine environment disposes a temporal order during fetal life (Serón-Ferré et al., 2012). It is clear that oral memory traditions and practices are in synchrony with maternal circadian cycles by incorporating music-chants, song, instruments, dance, and domestic life to self-sustainability.

In order to eradicate maternal fright, the Bosnian women survivors relied on their oral memory traditions and practices. With their female tacit maternal knowledge, these women understood that "life of a complex system is not reducible to its constituent parts" (Wheeler, 2006, p. 53). Domestic activities are highly influenced and sensitive to the environment and are outcomes of healing trauma impacts practices (Anderson, 2014; Christie & Pim, 2012; Polanyi, 1962). What I noted in the sixteen years of field work in Bosnia-Herzegovina with women who were victims of war crimes and war survivors was an orchestrated movement to have balconies filled with flowers and vegetables in response to the "accidental deaths" of mothers leaping from the balconies. Not just as a response to the deaths, the gardens perched precariously on balconies also sustained families.

When I interviewed the women survivors, I was told about the oral memory traditions of bringing food to funerals and memorials, which is a South Slavic and Islamic practice. The flowers draping and flowing over the pockmarked bullet and grenade holes on or near the balconies cover the balconies and apartment's wounds. The elder of the Kolo (circle) Sumejja women survivors from Novi Travnik, Bosnia-Herzegovina said,

“Never underestimate the flowers and plants to prevent the leaps, there’s no space for their feet and we do not step on plants.”

Oral memory traditions are preserved and perpetuated into the community and future generations (Levy & Sznajder, 2006, Steiner & Zelizer, 1995) and become rooted in biology. The Slavic oral memory traditions include chants, dance, agricultural, and culinary to herbal and medicinal practices. During the Balkan War, this knowledge of the environment, nature, and the land saved many from death and diseases. Take the folk round dance, called the kolo meaning wheel or to be in a circle (Allen & Hubbs, 1980, Hubbs, 1993). The kolo is Mesolithic in age and the Laban-Bartenieff system dance movement and movement psychotherapy have mapped the kolo patterns and rhythms in tandem with the affective neuroscience work of Dr. Steven Porges and polyvagal regulation (Eddy, 2009, Homann, 2010, Porges, 2011). Porges shows that the 10th vagus cranial nerve contributes to self-regulation of the internal viscera that include the heart, but also relates autonomic function to behaviors and movement. The South Slavic kolovodja, or the leader of the kolo, is contingent on a female social collective movement relating to autonomic nervous system, namely its affective experience, linking emotional expression and vocal communication in the chants and songs sung while dancing the kolo (Christie & Pim, 2012). The vodja, known as the female guide who narrates (communicates) the dance by using bodily cues to introduce step changes and rhythms, ignites new patterns in kolovodja folk dance (Ronström, 1991).

Conclusion

The prenatal and perinatal stages are the genetic apparatus from which to heal modern era catastrophic violence, if not a place to orchestrate prevention of maternal fright. Therefore, female humanity stands at a profound and little understood transition: the epochal biosemiotic coupled with genetic discoveries show the oral memory traditions are the site of daily life practices that could instigate a wider prevention of violence across diverse populations. According to Rossi, “genes are inner resources that we can all learn to use in creative manner in daily life to construct and reconstruct our brain and mind for optimum health and well-being,” (2004, p. 15). The oral memory traditions of South Slavic women war crimes and war survivors significantly focused on behaviors that evolve our organic world and increase the fitness of phenotypes through behavior (Hoffmeyer, 2008). The cultural practices and traditions calibrate our bodies to environments ranging from bioculinary, chants, dance, and rituals that integrate and co-evolve with

the workings of natural organic systems as all inclusive. In other words, oral memory traditions are a translation of our neural code and a template of practice often left out of the medical and science fields that, if known and utilized, open up vast possibilities of trauma healing commencing in the pre- and perinatal stages.

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