Chapter

The Feelings of Knowing—Fundamental Interoceptive Patterns Mindfulness-Based Proprioception Intervention (FoK-FIP MBPI)

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Abstract

This chapter introduces the feelings of knowing - fundamental interoceptive patterns mindfulness-based proprioception intervention (FoK-FIP MBPI). This intervention correlates with the ancient and beneficial yoga practice through proprioception - based interventions, balance exercise, and focused attention training. It is based on the feelings of knowing - fundamental interoceptive patterns (FoK-FIP) theory which is both a theory of the mind and a unification theory that connects consciousness to physics developed through the FoK-FIP system. Collectively, theory and system represent an approach that embraces the importance of the meaning of "life" combined with new physics introduced into the peer-reviewed literature. This approach aims to stimulate novel avenues for disease treatment and prevention using expanded definitions to facilitate new ways of thinking about consciousness and its phenomena, including interoception dysfunction and emotional dysregulation. The FoK-FIP MBPI is a contemporary approach to wellness derived from the theory with a foundation based on philosophical insights and peer-reviewed scientific literature. It is the treatment for the feelings of knowing - fundamental interoceptive patterns disorder (FoK-FIP D), the maladaptive schema of the theory connecting disease to the cognitive force. Cognitive force and observing ego are synonymous terms for integrated perception (individual and generalized).

Keywords: mind, electromagnetic radiation (EMR) consciousness, cognitive force, feelings of knowing—fundamental interoceptive patterns mindfulness-based proprioception intervention (FoK-FIP MBPI), feelings of knowing—fundamental interoceptive patterns disorder (FoK-FIP D), interoception of FoK-FIP, awareness charge, awareness current, extremely low-frequency (ELF) magnetic field, ELF fundamental interoceptive patterns (FIP), FoK-FIP interference, FoK-FIP feeling tones

1. Introduction

The feelings of knowing—fundamental interoceptive patterns mindfulness-based proprioception intervention (FoK-FIP MBPI) is based on a theory that includes a framework within a framework approach. The theory is called the feelings of knowing - fundamental interoceptive patterns (FoK-FIP) theory [1–4] developed through the FoK-FIP system [5], with both cellular and cosmological frameworks. The cellular frameworks occur through cosmological frameworks allowing the connection between physics and consciousness to be envisioned in new ways, including expanded definitions. The term 'new physics' refers to the theory's transdisciplinary modeling where the physical and nonphysical always co-occur. For example, where there is charge (e.g., magnetic, awareness, or electric), a current (e.g., magnetic, awareness, or electric) follows. The cosmological frameworks refer to the astrophysics and theoretical physics constructs (e.g., string theory) that, without mathematical language, conceptually expand the theory. In contrast, the cellular frameworks are the constructs represented by living organism models with DNA open to experimental trials. In this way, the FoK-FIP theory represents an efficient framework for understanding consciousness and its phenomena. Further, this theory's approach does something that has not been done previously. It paves the way to address one of string theory's biggest problems: its need for more contact with experiments [6]. The cognitive force is integral to how the theory's approach does this, representing aspects of the theory's expanded definitions and new physics introduced into the literature. In the FoK-FIP theory, the universe has five fundamental forces: electromagnetic, strong, weak, gravitational, and cognitive force. The theory also includes feelings of knowing - fundamental interoceptive patterns disorder (FoK-FIP D). FoK-FIP D refers to the disease of the cognitive force with abnormal sensitivity to the interoception of FoK-FIP. Transdisciplinary modeling using the theory's maladaptive schema gives an expanded definition of FoK [7], which is awareness charge and a *hidden variable* that fills with new physics knowledge gaps about what underlies interoception dysfunction and emotional dysregulation correlated to a broad range of animal models (human and non-human). The disease FoK-FIP D has the potential to broadly reframe scientific discussions that include physics and its laws and how those laws evolve by connecting them to medicine diagnosis and treatment. In this process, the theory deepens the understanding of the informal dictum, Life = Matter + Information [8].

Separation anxiety is an anxiety-related disorder common in dogs and is observed in the owner's real or perceived absence. This condition has been the literature's most commonly discussed canine anxiety disorder. However, etiology, treatment, and prevention remain elusive [9]. The FoK-FIP theory correlates separation anxiety with a type of FoK-FIP D (i.e., type I; see below). Aspects of the theory are being tested through an ongoing Institutional Animal Care and Use Committee-approved pilot study using dogs with anxiety conditions (PLAVS IACUC Number: C001). This research includes a daily intervention consisting of the FoK-FIP MBPI administered to the canine participants by their owners. This home-based daily intervention is derived from the FoK-FIP theory's transdisciplinary modeling that expands the understanding of quantum mechanics by connecting it to well-established rehabilitative interventions. As such, the intervention used in the pilot study is based on understanding linking the cognitive force to disease and treatment. Additionally, the FoK-FIP MBPI includes a novel use of neuromuscular electrical stimulation (NMES). The application of NMES represents a new form of exposure-like therapy as part of the FoK-FIP MBPI used to treat FoK-FIP D type I. In this process, the modality is used to induce emotional

dysregulation in animal models (e.g., human and non-human) more reactive to stressors which could be broadly described as trait anxiety. In the pilot study, the owners combine NMES-induced emotional triggering with positive reinforcement (e.g., verbal praise and/or treats) to focus their dog's attention. At the same time, they guide their dog through proprioception and balance exercises in which their dog wears the NMES unit's associated pads attached to the skin on the abdomen. The ongoing pilot study has shown some encouraging findings regarding the efficacy of the FoK-FIP MBPI in treating anxiety conditions in dogs. Although the details of this study are beyond this chapter's scope, it shows how aspects of the FoK-FIP theory can lead to testable hypotheses, specific analysis, and experimental design. Importantly, this study represents transdisciplinary modeling, allowing the informal dictum equation Life = Matter + Information to acquire real explanatory and predictive power shown by ongoing research. The pilot study includes observations combined with infrared thermal imaging (IRT) through the testing environment to create baseline and post-intervention thermograms. This information is then correlated with the owner's daily subjective assessment of the change in their dog's behavior. The information gleaned from this pilot study will be used to guide the larger approved study "Feelings of Knowing-Fundamental Interoceptive Patterns-Disorder (FoK-FIP-D) in the Canine Model" (PLAVS IACUC Number: C001) using 60 dogs with anxiety conditions.

2. The FoK-FIP system's core components with fundamental concepts

- **The mind** is the fundamental entity with non-manifest potential that existed before the Big Bang and still exists. Through the mind's potential, a universe is manifested. Everything is derived from the mind [10]. The mind, which itself is not change, is the cause for change to manifest. Change with and without a pattern exists. The mind with no beginning or ending co-exists with the construct of time cognitively broadcast into existence that begins and ends.

- **The universe** described in the literature consists of approximately 68% dark energy, 27% dark matter, and 5% normal matter [11]. These are *attributes of the mind*. The universe has *five fundamental forces* which occur through attributes of the mind interacting: electromagnetic, strong, weak, gravitational, and cognitive force. Attributes of the mind have *states*: dark energy has a pure awareness state; dark matter, referred to in theory as focal points of dark matter (FPDMs), has a pure mental state; normal matter (also referred to as matter, or ordinary matter) has a state of mental images, and the cognitive force has a state of "distress."

- **Change** occurs through the mind manifesting its infinite potential in which attributes of the mind emerge. It refers to the attribute itself (e.g., dark energy, FPDMs, normal matter, and cognitive force). Change can be patternless or patterned based on the variation associated with the state (e.g., pure awareness, pure mental, mental images, or "distress") of the attribute that cannot be or can be directly or indirectly empirically measured. For example, FPDMs, normal matter, and cognitive force refer to patterned change, whereas dark energy is a patternless change. Further, *symmetry* refers to what the attribute with the state produces that cannot be or can be directly or indirectly empirically measured. It is associated with both transformation and the universe's fundamental forces. *Transformation* refers to metamorphosis (using an expanded definition)

occurring through the mind's attributes, either induced through interaction or occurring spontaneously. It always includes change and can lead to a dramatic symmetry in form or appearance.

- **Consciousness** is electromagnetic radiation (EMR). EMR consciousness refers to information that can be cognitively broadcast. The EMR consciousness wavefront consists of the electromagnetic field. It is where the broadcasting of signals cognitively (i.e., cognitive broadcasting) by the cognitive force occurs.

- **The cognitive force** is both a synthesizing attribute of the mind and a fundamental force of the universe. It emerges through cosmological frameworks and is the "self" that cognitively broadcasts "life." The cognitive force is the perceiver of reality. It broadcasts signals derived from the electromagnetic field cognitively based on its sensitivity to the interoception of FoK-FIP. In this process, it models the components of interoceptive cognition consciousness, which is how the cognitive force learns. Further, there is only one cognitive force in the universe. However, it seems different because of how the universe is structured. In sum, the cognitive force represents the same kind of "self" that can cognitively broadcast "life" (i.e., interoceptive cognition consciousness) differently based on its sensitivity. Importantly, the cognitive force is not visible but exists as an invisible force through invisible dark matter (FPDMs) that came from the transformation of invisible dark energy. FPDMs can be scientifically inferred through gravity associated with dark energy, whereas the cognitive force is inferred from the behavior of living organism models. This behavior includes normal and abnormal obsessions, vigilance versus hypervigilance (that, over time, can lead to neuroticism).

- **Wave-particle duality of cognitive broadcasting** is the fundamental property of matter is that at one moment it appears as a wave and at another it acts like a particle. This ultimately depends on the viewpoint of the perceiver. In the FoK-FIP theory, the cognitive force is the perceiver with a sensitivity to the interoception of FoK-FIP (e.g., FoK-FIP interference or FoK-FIP feeling tones) that allows it to react so it can cognitively broadcast signals in a process that creates a viewpoint. The reactions of the cognitive force to the interoception of FoK-FIP are how it makes decisions. Cognitive broadcasting is a process that occurs through the wavefront in which awareness (i.e., charge and current) melds with magnetic (i.e., charge and current) and mimics electric (i.e., charge and current). In this process, the cognitive force broadcasts signals cognitively generated through the cosmological framework.

3. The core components of information processing

- **Feelings of knowing (FoK)** is a nonphysical awareness charge that leads to a nonphysical awareness current that can mimic a physical electric current [12], representing new physics.

- **Fundamental interoceptive patterns (FIP)** is the nonphysical extremely low-frequency (ELF) magnetic field produced through nonphysical awareness current. FIP is critical to cognitive broadcasting, in which its role is to push the cognitive force against gravity so that it can bind to the electromagnetic field.

- **FoK-FIP interference** is when the nonphysical awareness charge FoK through the nonphysical awareness current and the nonphysical ELF magnetic field FIP interfere with each other.

- **FoK-FIP feeling tones (e.g., pleasant, unpleasant, or neutral)** refer to the immediate and spontaneous awareness of the cognitive force with varying degrees of sensitivity to the frequency and intensity of FIP-FIP interference that occurs spontaneously.

- **The interoception of FoK-FIP** is a term that refers to both FoK-FIP interference and FoK-FIP feeling tones that form the substrate for cognitive broadcasting.

- **Cognitive broadcasting** is the process where signals derived from the electromagnetic field of EMR consciousness are broadcast cognitively by the cognitive force that reacts (e.g., automatically, impulsively, or with forethought)

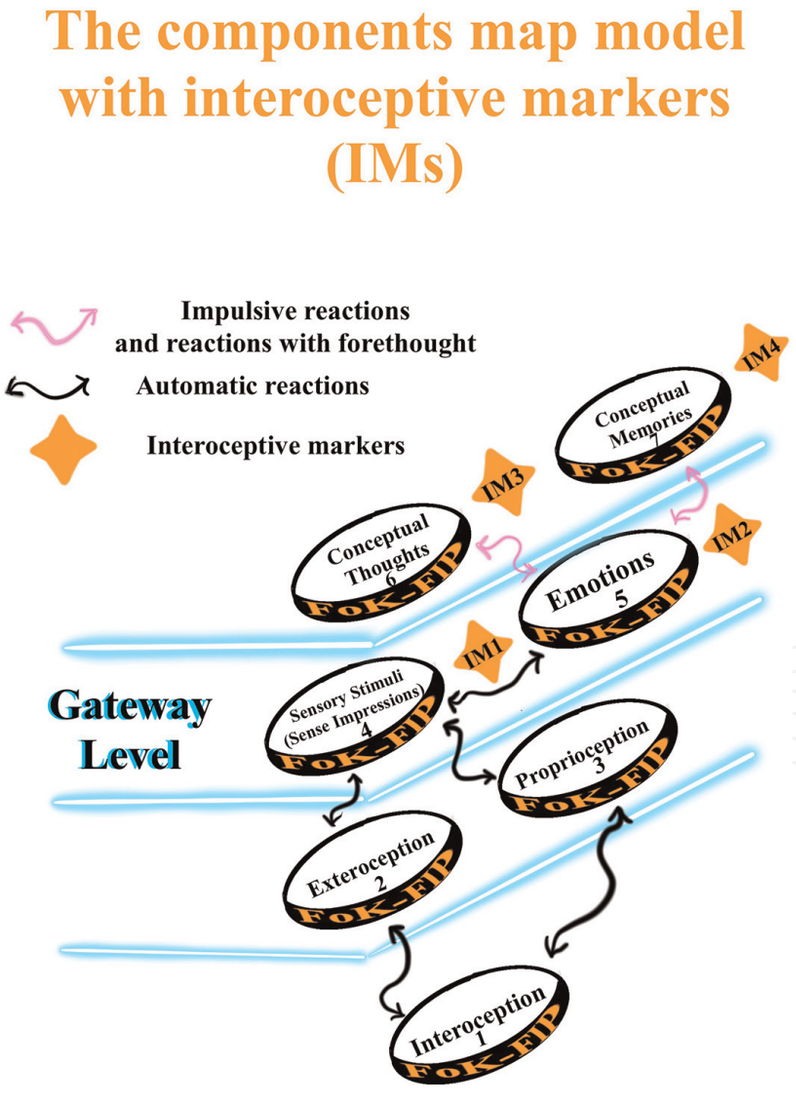

Figure 1.
The broadcasting of signals cognitively by the cognitive force produces components of interoceptive cognition consciousness (i.e., 1–7) envisioned through the components map model with IMs. The IMs show areas of susceptibility related to the cognitive force's awareness of its sensitivity to the interoception of FoK-FIP during cognitive broadcasting. The components map model with interoceptive markers (IMs).

to the interoception of FoK-FIP (e.g., FoK-FIP interference or FoK-FIP feeling tones). Responses of the cognitive force to FoK-FIP interference correlate with the consciousness percepts of attachment, aversion, or indifference (**Figure 1**).

- **Interoceptive cognition consciousness** is "life" and represents the smaller part of the larger EMR consciousness broadcast cognitively. This concept correlates to the famous series of lectures delivered in Dublin, Ireland, in 1943 by Erwin Schrödinger and in his influential book titled What is Life? [13]. Further, interoceptive cognition consciousness includes a phenomenal world cognitively broadcasted into existence by the cognitive force with myriad symmetries. As such, the history of the phenomenal world correlates with the stages of cognitive broadcasting occurring through the cognitive force that evolved to include higher-end cognition. The history of cognitive broadcasting is intimately connected to the "fossil radiation" called the Cosmic Microwave Background (CMB). Additionally, electromagnetic entities (i.e., living organism models with DNA) began emerging into the phenomenal world of interoceptive cognition consciousness when the cognitive force began broadcasting signals to create higher-end cognition.

- **Living organism models with DNA** are electromagnetic figures representing cellular frameworks that emerge within cosmological frameworks. Further, the sensitivity of the cognitive force of the framework to the interoception of FoK-FIP produces interoceptive cognition consciousness with a certain continuity. In this process, the distinctive way signals are cognitively broadcast by the cognitive force is represented by living organism models with DNA. Notably, when living organism models emerge into the phenomenal world, they are perceived by the cognitive force as if the world is projected around them. Additionally, the cognitive force cannot perceive itself directly. Instead, it is aware of FoK-FIP feeling tones and associates them with electromagnetic entities. In this process, the awareness of FoK-FIP feeling tones is how the cognitive force derives a "sense of self" that begins with an impression of cognitively broadcast senses that leads to higher-end cognitive broadcasting. Through FoK-FIP feeling tones, these electromagnetic entities have a distinctive élan that sets them apart as remarkable and special from the other "objects" and electromagnetic entities in the phenomenal world based on the viewpoint of the cognitive force.

- **EMR consciousness wavefront** is produced by the coupling between the nonphysical and physical electromagnetic field. The cognitive force is bound to parts of the wavefront. Further, in the cellular framework, the EMR consciousness wavefront exists based on the body of electromagnetic entities representing the framework. As such, the wavefront can be envisioned in myriad ways correlated with living organism models with DNA. For example, the EMR consciousness wavefront correlated with animal models is coupled to the central nervous system and peripheral nervous tissue in which the spinal cord connecting the body and brain is integral to the cognitive broadcasting process. The core concept here is that EMR consciousness is coupled to structures in which regions connect, allowing the wavefront to form so that cognitive broadcasting can occur.

- **The polarity of the cognitive force** is "bipolar," which does not match current definitions. Polarity represents new physics as the property of the cognitive force

that emerges from FoK and is "pushed" by FIP. Cognitive broadcasting ultimately occurs through the cognitive force's polarity in which *intrinsic* polarity is derived from FoK whereas *extrinsic* polarity is derived from FIP.

- **Cognitive pixels** defined in the theory are "bits" of information in the EMR consciousness wavefront with cognitive force. The cognitive force with polarity (e.g., intrinsic and extrinsic) will cognitively bind to parts of the electromagnetic field while pushed by FIP in a process correlated with the binding process in the literature. Cognitive binding produces cognitive pixels that allow the cognitive force to act as a "cognitive magnet." Through the EMR consciousness wavefront, the cognitive force can "pull itself" together through billions of cognitive pixels brought together simultaneously. This process refers to the chunking and stimulus organization of cognitive pixels that generates the components of interoceptive cognition consciousness envisioned through the components map model with IMs.

- **The antecedent and the consequent**. The interoception of FoK-FIP is "the antecedent," and reactions to it are "the consequent" [14] related to cognitive broadcasting. The cognitive force's sensitivity to FoK-FIP feeling tones while broadcasting signals causes reactions that can lead to emotional processing. The cognitive broadcasting of signals produces "if-then" relationships that correlate to emotional biasing.

- **"Distress" = FoK + FIP,** in the theory. The "distress" of the cognitive force is one of the more significant domains of cognitive broadcasting, impacting a wide range of signal processing. It refers to the normal state of the cognitive force with varying normal and abnormal sensitivities to the interoception of FoK-FIP. In this modeling, "distress" is not always associated with dysfunction. Instead, through cognitive force, "distress" refers to the two-part relationship between "the consequent" (i.e., reacting) and "the antecedent" (i.e., FoK-FIP) that creates the "if-then" relationship of "fear" and "anxiety" required to make decisions. Further, the "Fear" of the cognitive force is an intervening variable between the FoK awareness charge and awareness current. Through FoK-FIP interference, awareness charge and current are the sets of context-dependent stimuli intensity and frequency [15]. They lead to the cognitive force's responses through automatic and impulsive reactions. In contrast, the "anxiety" of the cognitive force is the variable that follows FoK through FIP. It is intimately connected to feeling the patterns of the ELF field FIP associated with FoK-FIP feeling tones. Additionally, FIP is how impulse is experienced and integral to the memory of the cognitive force. Degrees of impulse that are experienced as if they were pushing causes the cognitive force to bind to parts of the electromagnetic field through cognitive binding. In sum, FoK refers to the "fear expression" of the cognitive force whereas "anxiety learning" occurs through ELF magnetic field FIP patterns. Higher-end cognitive broadcasting is how the "fear" and "anxiety" of the cognitive force manifests in complex ways related to living organisms with DNA, such as the behavioral responses of animal models with the "fight or flight" response.

- **A feedback loop of cognitive broadcasting** occurs through the reactions of the cognitive force to the interoception of FoK-FIP. It consists of an automatic reaction followed by an impulsive reaction representing a reaction sequence that "accelerates" cognitive broadcasting. Additionally, this response sequence drives

"informativeness" [16], which might include broadcasting signals for emotional processing. Further, automatic reactions followed by impulsive reactions represent an over-practiced response that may or may not be followed by a reaction with forethought.

- **The "brake" and the "accelerator"**. The reaction with forethought represents the "brake" that inhibits the cognitive force's creation of "informativeness" through broadcasting for higher-end cognition. In this process, a reaction with forethought helps slow or stop the drive created through the automatic reaction that is followed by an impulsive reaction sequence. Importantly, higher-end cognitive broadcasting correlates the reactions of the cognitive force to the behavior of the electromagnetic entities that emerge in the phenomenal world of interoceptive cognition consciousness. For example, frameworks represented by electromagnetic entities of animal models have through their central nervous system an "accelerator" mechanism consisting of the major excitatory neurotransmitter glutamate and a "brake" mechanism through the major inhibitory neurotransmitters Gamma-aminobutyric acid (GABA) and glycine. In vertebrates, glutamate is the most abundant excitatory neurotransmitter and plays a critical role in memory, cognition, and mood regulation through its metabolism and several types of receptors throughout the central nervous system. In contrast, GABA and glycine are common inhibitory neurotransmitters associated with producing a calming effect by lessening the ability of a nerve cell to receive, create or send chemical messages to other nerve cells.

4. The cellular framework

The cellular frameworks of the FoK-FIP theory refer to the particular assembly of parts that facilitates cognitive broadcasting. At every moment in the cellular FoK-FIP frameworks, the stages of cognitive broadcasting occur through the activity of many trillions of cells with DNA. The FoK-gene expression causes the emergence of the cognitive force along with producing FIP. Further, cognitive broadcasting is not intrinsic to the particular assembly of the parts [17]. Instead, this process depends on the viewpoint of the cognitive force of the framework that defines signals cognitively by reacting to the interoception of FoK-FIP. The cognitive force's responses largely depend on its sensitivity to FoK-FIP interference without awareness or with awareness of FoK-FIP feeling tones. Importantly, the cells of a particular cellular framework can differ, but a core concept is that they all encode the same cognitive force through the expression of the FoK-gene. Additionally, cognitive broadcasting occurs through cycles correlated to cognitive cycles discussed in the literature [18]. In animal models, the parts of the cellular framework integral to cognitive broadcasting consist of a head, thorax, and abdominopelvic region connected through the EMR consciousness wavefront coupled to the spinal cord and peripheral nervous tissue. This connection includes the process where awareness current mimics the electric current of ions sodium, potassium, and chloride that muscles and nerves generate through contraction or signal transmission. In this process, the activity of "excitable tissues" [19] made of cells such as myocytes (e.g., smooth, cardiac, and skeletal) and neurons connect with the continuous production of the interoception of FoK-FIP. In the cellular framework, the interoception of FoK-FIP is produced continuously through the awareness charge FoK when the FoK-gene is expressed. This process

leads to the continuous production of the ELF magnetic field FIP that melds with magnetic fields from other naturally occurring processes in the cellular framework.

The description of the components of the cellular framework that follows refers to human models, which correlates in many regards to dog models:

4.1 The thorax is the primary region for continuous FoK-FIP interference

In the cellular framework correlating with animal models, the thorax is considered the primary region in the body for the consistent production of FoK-FIP interference. In the human model, landmarks for this region include the suprasternal notch, which is the visible dip at the base of the neck between the two medial collarbones, the xiphoid process, which is roughly located in the ventral midline at the 9th–10th thoracic vertebra, and the nipple line. Magnetically sensitive organs, through the sensitive cognitive force pushed by the ELF magnetic field FIP, are located in the thoracic and abdominopelvic regions, congruent with cadaver research [20]. These organs include the heart [21], lung [22], spleen [23, 24], liver [25], and pancreas [26, 27]. Further, through the cellular framework, the death of cells occurs. *Apoptosis* is a normal and controlled aspect related to the functioning of the cellular framework. However, continuous cognitive broadcasting through the cognitive force is not interrupted even though cell death occurs. A core reason for this is the cardiovascular system, in which activation of the thoracic region correlates with the continuous generation of the interoception of FoK-FIP. The heart's myocytes play a significant role in this process. The specialized cardiac pacemaker cells control the heart's contraction. The heart is the organ in the thorax that correlates with consistent activation with aspects that cannot be controlled voluntarily. Involuntary movements associated with the thoracic region activation occur through cardiac muscle tissue. This activation includes specialized cardiac myocytes generating spontaneous action potentials correlated with FoK gene expression. Through this relationship, cardiac conduction corresponds with a rate of continuous production of the interoception of FoK-FIP through pacemaker cells located in the heart's sinoatrial (SA) and atrioventricular (AV) nodes. This concept includes FoK-FIP interference beginning in the thoracic region through the heart, which ultimately corresponds with unawareness of "distress." Through the cells located in the thoracic region, the cognitive force (i.e., individual and generalized integrated perception) continuously emerges simultaneously with the depolarization of cardiac cells or where synchronous firing occurs. Notably, in the thorax are the organs of circulation and respiration, in which the heart is the primary organ that is the "gatekeeper" of the process. The heart's continuous activity, including the activity of an artificial heart (e.g., artificial heart patients), ensures the connections needed to form the EMR consciousness wavefront allowing the cognitive force to broadcast signals cognitively.

The transdisciplinary modeling of the FoK-FIP theory builds on the discovery of a specific oxytocin (OT) system, including the presence of OT and the OT receptor (OTR) in rodents and human hearts [28]. OT exerts its functions by binding to OTRs in cardiac cells or indirectly in the vasculature to regulate function [29]. The left ventricular (LV) preload and the inotropic state [30] may decrease in this process. Further, OT induces vasoconstriction and vasodilation [31] depending on the vascular bed with which it interacts. Through the thoracic region in which cognitive broadcasting occurs, OT modulates social and emotional processes associated with many animal models [32]. In the FoK-FIP theory, integral to how OT modulation occurs is the EMR consciousness wavefront coupled to the central nervous system and peripheral nervous tissue. In this process, activation of the thoracic region includes continuous FoK-FIP interference

production with OT control of vascular tone, blood flow, regrowth, and remodeling [33, 34]. Varying amounts of OT production in the brain/hypothalamus connects to the thorax region activation with the cognitive force through the EMR consciousness wavefront coupled to the central nervous system and peripheral nervous tissue. The broadcasting of signals cognitively by the cognitive force ultimately creates OT effects that correlate to "distress," in which the interoception of FoK-FIP acts as the antecedent, and the reactions are consequent. Through this relationship, the continuous production of "distress" signals (i.e., FoK-derived "fear" and FIP-derived "anxiety") has effects on the cognitive force related to cognitive broadcasting. Through higher-end cognitive broadcasting, the cognitive force that reacts correlates to the behavior of animal models. As such, the transdisciplinary modeling of the theory refers to new ways of understanding aspects of the behavior choices of animal models associated with goals and moral beliefs [35]. This behavior includes social stress and anxiety, social memory, affiliation and bonding, emotion recognition, mentalizing, empathy, and interpersonal trust [32].

4.2 The FoK-FIP signaling transduction pathway

The FoK-FIP signaling transduction pathway consists of an inner and outer layer and occurs through a general mass of cells. The *inner layer* correlated with human models consists of the brain and spinal cord coupled to the EMR consciousness wavefront and peripheral nervous tissue. The spinal cord is part of the inner transduction pathway that connects the head to the thorax and abdominopelvic regions. The connected components of the cellular framework allow the formation of the EMR consciousness wavefront. The brain represents the proximal part of the inner layer. Integral to this pathway is the brain stem [36], the thalamocortical system [37], and the frontal [38], striatal [39], and cerebellar regions [40, 41]. The signaling transduction pathway spreads through a zone of energetically charged particles from sensory cortices to rostral corticothalamic regions and the posterior frontal area [41]. In this process, the cortical and subcortical claustrum, including the anterior and posterior cortico-claustral tracts, connect the claustrum to the prefrontal cortex and visual areas [42]. The superior tract that links the claustrum with the sensorimotor cortex and the lateral pathway that connects the claustrum to the auditory cortex are included. A claustral medial pathway connects the claustrum with the basal ganglia [42]. Additionally, the inner layer of this pathway has a bilateral connection between the claustrum and contralateral cortical areas and interclaustral communication with interconnection bundles interspersed within the bulk of the trunk of the corpus callosum [42, 43]. In contrast, the *outer layer* of this pathway consists of the ganglia (e.g., superior cervical ganglion, first thoracic ganglion, celiac ganglion, superior mesenteric ganglion, first lumbar ganglion, inferior mesenteric ganglion, first sacral ganglion). It also includes the vagus and paired splenic nerves (e.g., cardiopulmonary, thoracic, lumbar, sacral, and pelvic splanchnic nerves).

4.3 The FoK-FIP signaling network

This network refers to connective tissue cells congruent with a schema to categorize tissue-specific types [20]. It includes fibrous connective tissue (e.g., skin, tendons, ligaments, aponeuroses), adipose connective tissue, and skeletal tissue (e.g., bone and cartilage). This signaling network can be further categorized according to the following criteria: The connective tissue is either layered between different types of tissue (e.g., epithelial, muscle, nerves) or surrounds tissues (e.g., blood vessels). It occupies the space between organs (e.g., subcutaneous, retroperitoneal). The

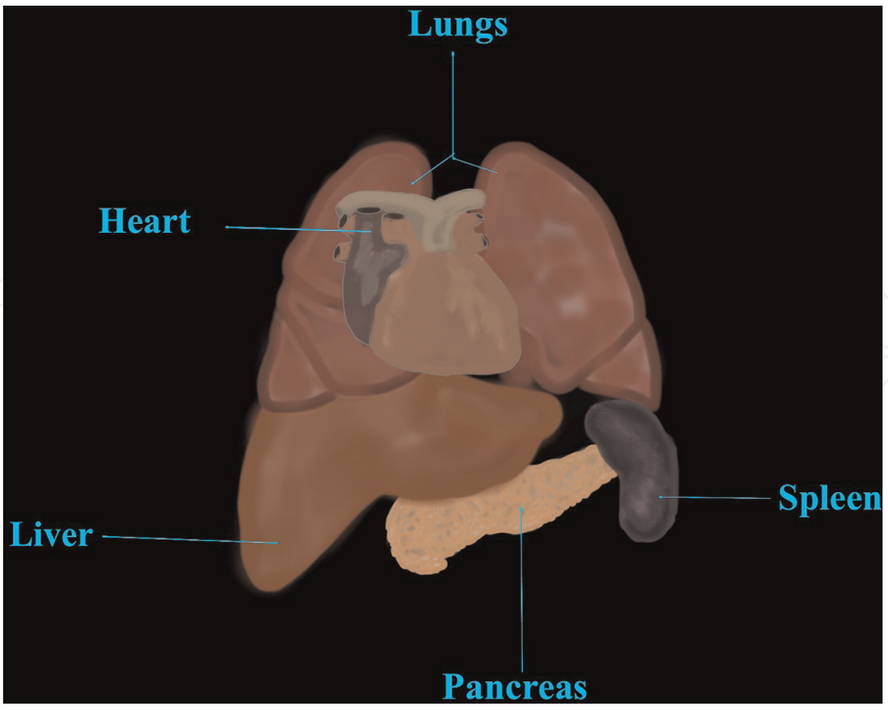

Figure 2.
The thoracic region includes the magnetically sensitive organs the heart, lung, spleen, liver, and pancreas through the cognitive force. The thoracic primary region in the human model.

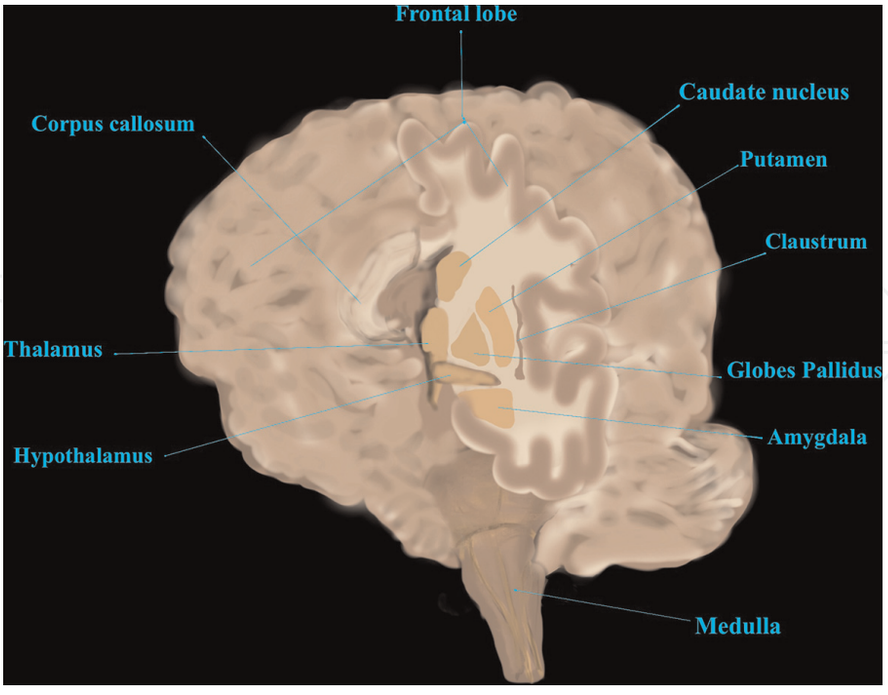

Figure 3.
The brain is part of the inner layer of the FoK-FIP signaling transduction pathway depicted here with the left hemisphere coronally sectioned at the level of the basal ganglia. These images were created by building upon the work of frank H. Netter, MD [48], and the John W. Sundsten institution, clay brain content: 2-D and 3-D views of the brain from cadaver sections, MRI scans, and computer reconstructions, *digital anatomist project (Seattle, WA: Department of Biological Structure, University of Washington, 1994). The brain.*

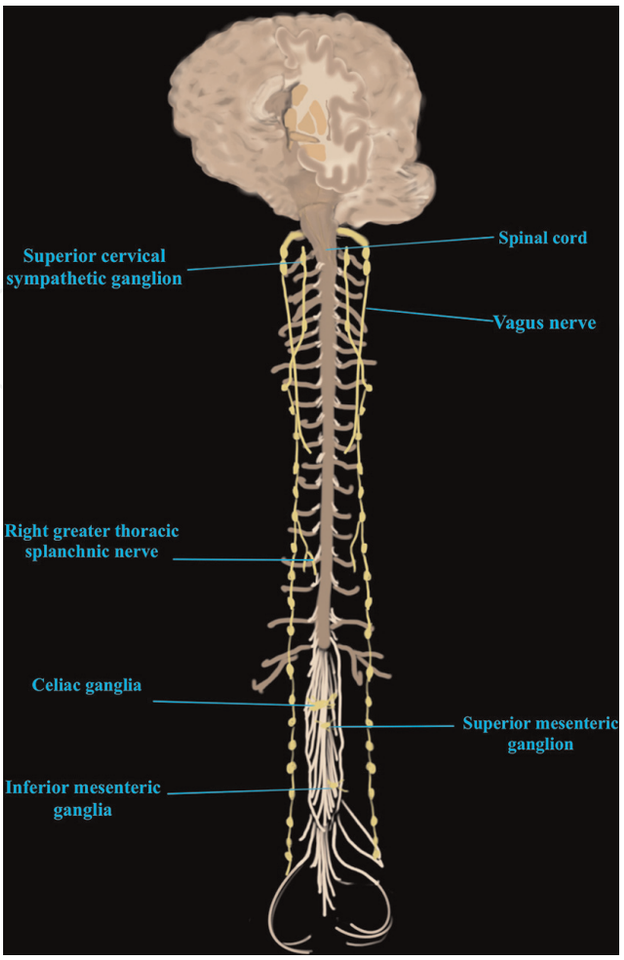

Figure 4.
Parts of the inner and outer FoK-FIP signaling transduction pathway. The FoK-FIP signaling transduction pathway.

signaling network serves a biomechanical function (e.g., bones, cartilage, tendons, and ligaments) that includes the cognitive force associated with immovable and moveable cells. The immobile population of cells develops from undifferentiated mesenchyme cells. In contrast, the mobile population of cells comprises hematopoietic stem cells, including macrophages and leukocytes. The cells of the signaling network that are critical to the EMR consciousness wavefront function are fibroblasts/fibrocytes [44], osteoblasts/osteocytes [45], chondroblasts/chondrocytes, monocytes [46], macrophages, mast cells [47]; and adipocytes (**Figures 2–6**) [49].

5. The disease: FoK-FIP D

FoK-FIP D is the maladaptive schema that occurs through the cognitive force with abnormal (i.e., hypo vs. hyper) sensitivity to the interoception of FoK-FIP. It is a transdisciplinary modeled complex disease that explains the comorbidity of mental disorders and physical conditions of animal models that emerge within the world of interoceptive cognition consciousness. The core features of FoK-FIP D include integrated perception connected with all levels of peripheral nerves, tissue modulation,

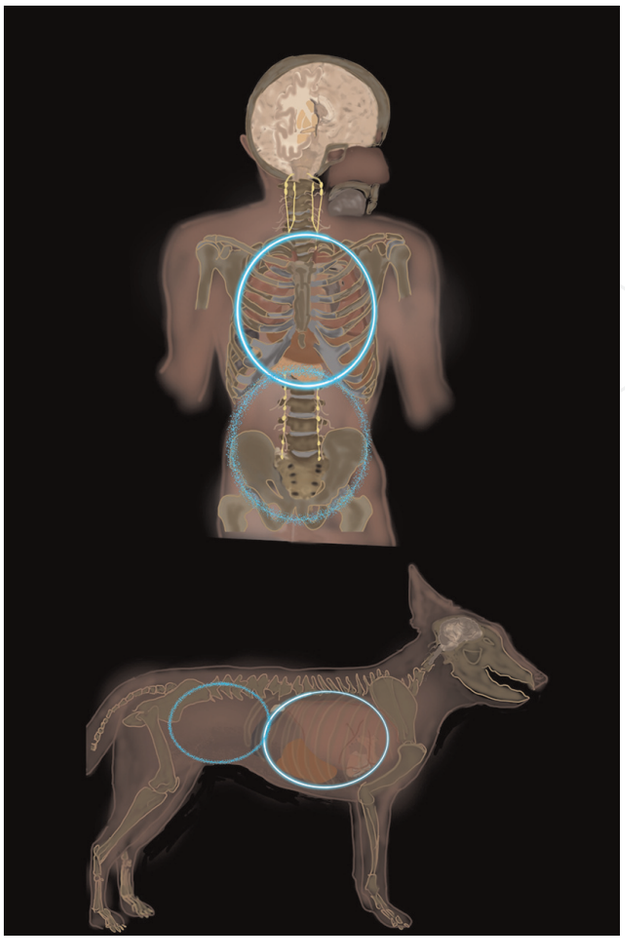

Figure 5.
In animal models, through the head, thorax, and abdominopelvic regions connected through the spinal cord and peripheral nervous tissue coupled to the EMR consciousness wavefront, there is a continuous production of the interoception of FoK-FIP. In this figure, the thorax of a human and dog model is demarcated by a solid circle, whereas a dotted circle demarcates the abdominopelvic region. The human and canine model with connected components.

and limbic system functions through the EMR consciousness wavefront spinal cord coupling. As such, the cerebral cortex's conscious intellectual functions and the brain stem's unconscious and autonomic functions connect with cognitive broadcasting activities through the cognitive force that reacts to the interoception of FoK-FIP. The core concept is that through FoK-gene expression, the cognitive force has abnormal sensitivity to the interoception of FoK-FIP. In the cellular framework represented by the animal model, the cognitive force's sensitivity is linked by the EMR consciousness wavefront coupled with the spinal cord and peripheral nervous tissue to sympathetic (originating from dorsal root ganglia) and parasympathetic (originating in the nodose ganglion of the vagus nerve or dorsal root ganglia at sacral levels) sensory neurons. There are three variations of FOK-FIP D in which FoK gene expression is abnormal due to epigenetic (i.e., some external factor influences the expression) and/or genetic factors:

5.1 Type IA

FoK gene expression is increased, and the cognitive force has increased sensitivity to the interoception of FoK-FIP. Increased myocyte contraction occurs and

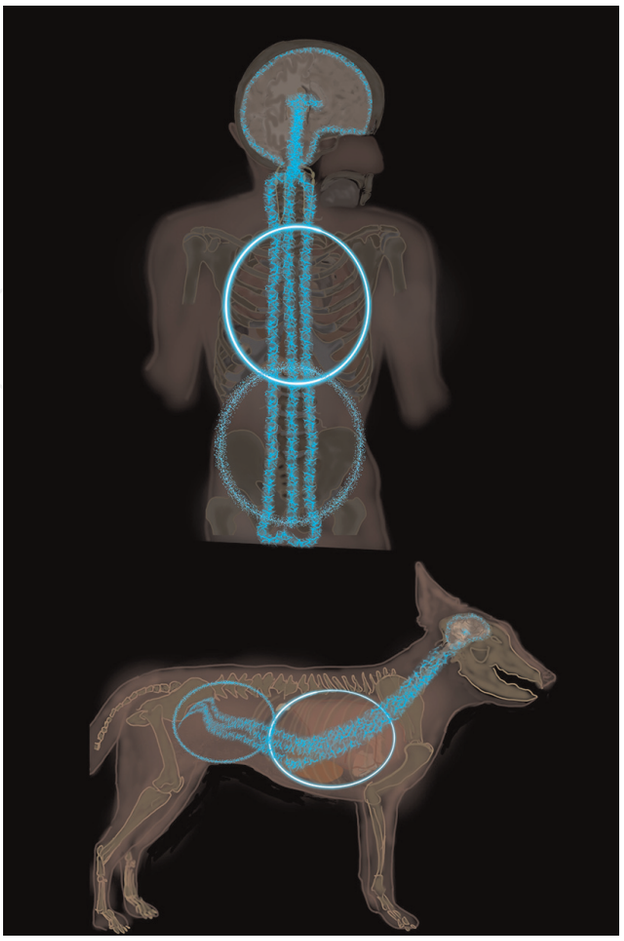

Figure 6.
The EMR consciousness wavefront coupled to the spinal cord and peripheral nervous tissue of a human and a dog model connects the head, thorax, and abdominopelvic regions. The EMR consciousness wavefront.

sympathetic nervous system hyperactivity is transmitted via the paleospinothalamic tract leading to overstimulation of the limbic system. This co-occurs with decreased gastrointestinal tract activity and signaling of the inner organs, leading to decreased afferent transmission via the vagus nerve fibers [50].

5.2 Type IB

FoK gene expression is increased, and the cognitive force has increased sensitivity to the interoception of FoK-FIP. Increased myocyte contraction occurs and sympathetic nervous system hyperactivity are transmitted via the paleospinothalamic tract with overstimulation of the limbic system.

5.3 Type IC

FoK gene expression is increased, and the cognitive force has increased sensitivity to the interoception of FoK-FIP. Decreased gastrointestinal tract activity and signaling of the inner organs lead to decreased afferent transmission via the vagus nerve fibers.

5.4 Type IIA

FoK gene expression is decreased; the cognitive force has decreased sensitivity to the interoception of FoK-FIP. Decreased myocyte contraction occurs and sympathetic nervous system hypoactivity is transmitted via the paleospinothalamic tract with under-stimulation of the limbic system. This co-occurs with increased gastrointestinal tract activity and signaling of the inner organs leading to increased afferent transmission via the vagus nerve fibers.

5.5 Type IIB

FoK gene expression is decreased; the cognitive force has decreased sensitivity to the interoception of FoK-FIP. Decreased myocyte contraction to occur and sympathetic nervous system hypoactivity is transmitted via the paleospinothalamic tract with under-stimulation of the limbic system.

5.6 Type IIC

FoK gene expression is decreased; the cognitive force has decreased sensitivity to the interoception of FoK-FIP. Increased gastrointestinal tract activity and signaling of the inner organs lead to increased afferent transmission via the vagus nerve fibers.

5.7 Type III

FoK gene mutation occurs.

6. The core concepts of the FoK-FIP MBPI

In the FoK-FIP theory, animal models that emerge in the phenomenal world of interoceptive cognition consciousness expands our understanding of genes. New physics of the cognitive force, understood through transdisciplinary modeling with the framework within a framework approach, creates the contextual bridging needed to connect quantum mechanics to medical diagnosis and intervention that includes activity-dependent plasticity. The FoK-FIP MBPI is the treatment for FoK-FIP D that includes exposure-like therapy through NMES application. NMES is the modality that perturbs the autonomic nervous system connected to the EMR consciousness wavefront coupled to the spinal cord and peripheral nervous tissue. This perturbation occurs during focused attention training and proprioception/balance exercise. In this process, the FoK-FIP MBPI, over time, facilitates durable learning through sympathetic nervous system stimulation with brain effects, including plasticity. The benefits of the intervention refer to changes in perception of the cognitive force, including those of ELF magnetic field FIP associated with adverse pain sensations.
Continuous usage of the FoK-FIP MBPI aims to increase the quality of "life" (i.e., interoceptive cognition consciousness) through beneficial cognitive broadcasting effects related to the sensitivity of the cognitive force to the interoception of FoK-FIP. Higher-end cognitive broadcasting shows improvements in animal models in alertness, achievement, and mood, and reduction of aggressive outbursts.
Further, the FoK-FIP MBPI techniques were formulated to provide some symptomatic relief from the downstream effects of sympathetic system upregulation,

including the limbic center and the parasympathetic system being dysregulated with reduced vagal tone. Broad categories of improvement related to the FoK-FIP MBPI arise partly from alterations in neural function linked with the ability of the cognitive force to stabilize its impulsive reactivity to FoK-FIP feeling tones that underlie emotional processing.

Responses of the cognitive force can be stabilized by initiating a reaction with forethought following an impulsive reaction. This allows aspects of cognitive broadcasting to be modulated by the cognitive force, which leads to stabilizing its reactivity. It is a process envisioned through the components map model with IMs as returning to the gateway level of processing, specifically to component 4. This component allows focus on FoK-FIP feeling tones through sensory stimuli as sense impressions. In this process, subject and object are not a part of cognitive broadcasting. Instead, there is awareness of signals being broadcast cognitively without conceptual elaboration. Further, in the FoK-FIP MBPI, FoK-FIP feeling tones create an interoceptive experience vital to learning how to modulate emotional processing. When focused willingly by the cognitive force through a reaction with forethought, it is a tool that creates mental stability correlated to self-efficacy. It is suggested that practicing the FoK-FIP MBPI daily leads to the self-efficacy analogous to that needed to overcome treatment-resistant depression. The theory builds on the argument described in the literature that changes in self-efficacy drive all positive changes in treatment processes. It is predicted that, over time, the intervention will change the perception of the cognitive force of uncontrollable "distress" reactivity. In sum, the FoK-FIP MBPI is used to break up the automaticity of habitual reactions (i.e., automatic reactions followed by impulsive reactions) to FoK-FIP feeling tones by doing something different. Importantly, this intervention teaches that trying to avoid experiencing unpleasant FoK-FIP feeling tones is ineffective because the cognitive force cannot prevent them from occurring. Instead, awareness of FoK-FIP interference is expected to continue to create an intrusive "not right experience" until the cognitive force changes its relationship to unpleasant FoK-FIP feeling tones.

The FoK-FIP MBPI is a daily intervention with morning and evening formal practice sessions. The parts of the formal practice are mindfulness consisting of focused attention with or without the use of NMES, followed by NMES usage with proprioception and balance exercise derived from the physiotherapy literature [51]. Spontaneous practice is done throughout the day and represents an abbreviated form of formal practice that consists only of mindfulness practice without using NMES. In this regard, the FoK-FIP MBPI has aspects that correlate to the ancient and complex yoga practice of Indian philosophy with many different styles. Further, it also has aspects that correlate with the Buddhist psychological model (BPM) [52], mindful awareness in body-oriented therapy (MABT) [53], and inhibitory learning theory (ILT) [54]. The BPM is based on Buddhist texts called the Abhidhamma Pitaka and seeks to simplify mindfulness-based approaches such as mindfulness and attention regulation (i.e., concentration practice) that may reduce symptoms and improve well-being. It identifies mechanisms and describes what may occur during mindfulness practice. In contrast, the MABT is based on psychological and neurobiological research on understanding how interoceptive awareness facilitates regulation and an integrated sense of self, contributing to health and well-being. Further, the ILT builds on exposure-based therapy and is based on the idea that exaggerated beliefs maintain pathological fear of danger. This leads to maladaptive escape and avoidance behavior. As described by the ILT, the inhibitory learning process represents a new understanding of classical conditioning extinction that pulls

away from habituation. Exposure and habituation are not prohibited, but ILT is an active learning process rather than a mechanical kind of exposure process.

The FoK-FIP MBPI consists of:

- **Mindfulness through sitting in which attention is focused**. This part of the FoK-FIP MBPI correlated to human models would be achieved through a willingness to focus on FoK-FIP feeling tones as a very specific interoceptive experience from the head, thorax, or abdominopelvic region while sitting and can be done with or without the use of NMES. Once found, the goal is to focus on it without trying to change anything. The core concept is "willingness" to practice even though it may be difficult.

- **Mindfulness through proprioception and balance exercises using NMES** This part of the FoK-FIP MBPI follows mindfulness through sitting practice (above). This part of the intervention with human models would be achieved through a willingness to focus on a very specific interoceptive experience (i.e., FoK-FIP feeling tone) from the head, thorax, or abdominopelvic region while engaged in proprioception and balance exercise using NMES. In this process, the NMES unit depolarizes motor nerves, causing muscle contractions in the abdominal or upper body regions according to a rotating schedule (**Figure 7**).

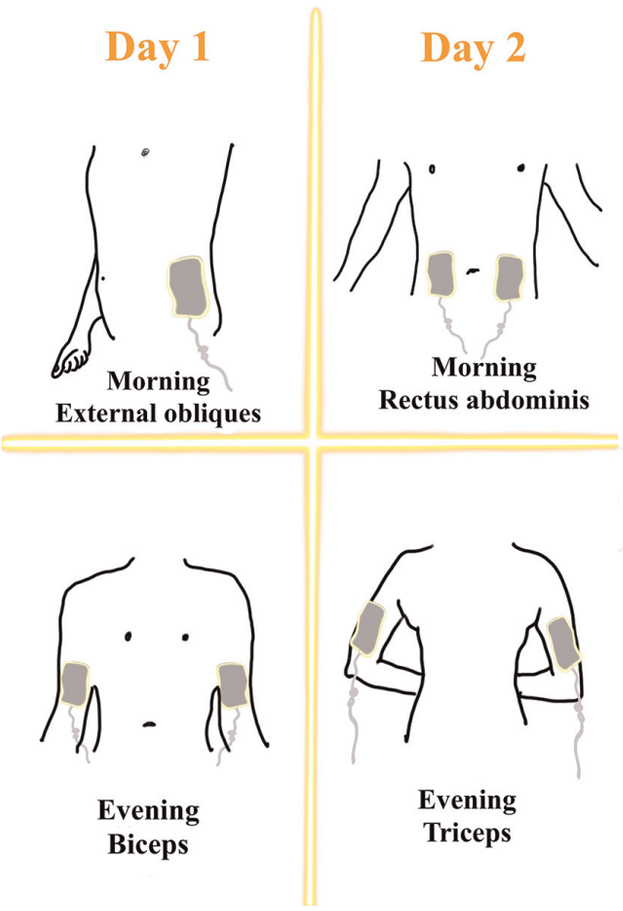

Figure 7.
This figure depicts the sites for application of the pads associated with the NMES unit applied to the skin of human models during daily use to use as part of the FoK-FIP MBPI. The human model neuromuscular electrical stimulation (NMES) schedule.

- **The spontaneous practice** in response to intrusive, unpleasant interoceptive experiences from the head, thorax, or abdominopelvic region that connects to anxious "distress," the goal is to focus on it. In this process, the willingness to practice exposure-like activity breaks up the automaticity of reacting similarly to awareness of FoK-FIP feeling tones. A hand-held "tally" counter records the momentary commitment to "challenge" rather than avoid intrusive, unpleasant interoceptive experiences.

7. The mechanistic modeling of the FoK-FIP MBPI

- ***The FoK-FIP MBPI-dependent enhancement of plasticity*** refers to the close temporal association of stimulation, proprioception, and balance exercise with focused attention on the specific events of FoK-FIP feeling tones. Engagement of neuromodulatory circuits by short trains of NMES provides a precisely timed, phasic release of neuromodulators that reinforces neural circuits activated during focused attention while engaging proprioception centers. The temporal association between NMES, proprioception/balance, and focused attention provides the specificity to target plasticity to particular neural circuits [55]. In neural circuits associated with control of the muscle groups, myocyte contraction is linked to awareness current producing ELF magnetic field FIP. The idea here is that NMES is beneficial largely by providing precise timing mediating reinforcement that supports the role of phasic activation of the cholinergic and noradrenergic systems connected to pain associated with patterns of FIP.

- **Neuromuscular electrical stimulation (NMES)**. Current associated with the placement of the NMES unit's pads will follow the path of least resistance, and motor nerves depolarize, which produces muscle contractions. In this process, signals travel up sensory nerve fibers composed of axons of sensory neurons in the spinal ganglion. These axons enter the spinal cord coupled to the EMR consciousness wavefront, divide and travel short distances upward and downward one or two segments. They terminate in the outer (external) part of the spinal cord's dorsal horn. Various nerve fibers synapse in the dorsal horn, including A-alpha which are associated with proprioception (position sense), and A-beta which are related to touch. Collateral axons also penetrate the deepest layers of the dorsal horn. Additionally, the smaller-diameter fibers that transmit pain, A-delta, along with unmyelinated C fibers, synapse on two main types of neurons located in specific layers of the dorsal root of the spinal cord: The specific nociceptive neurons and non-specific neurons. The axons of the non-specific nociceptive neurons form the paleospinothalamic tract. Complex chronic pain (in contrast with acute or chronic pain) mainly stimulates the limbic system. Indirectly, the NMES enhances the benefits of the FoK-FIP MBPI by engaging the plasticity-enabling cholinergic and noradrenergic neuromodulatory systems during the sitting or standing-focused attention practice. Through the spinal cord coupled to the EMR consciousness wavefront including the extraspinal tissue of the vagus nerve, NMES stimulation drives robust, phasic neural activity in the locus coeruleus (the primary source of norepinephrine in the central nervous system). It increases norepinephrine levels in the hippocampus and cortex [56–58] and increases levels of brain-derived neurotrophic factor (BDNF, a neurotrophin strongly linked to neural plasticity) [55]. Through repeated formal practice, the FoK-FIP MBPI provides robust

activation of neuromodulatory systems at specific times during training to promote substantial enhancement of plasticity, which may have benefits related to the efficacy of spontaneous practice.

- **Proprioception and balance exercise** is linked with the hypothalamus's role in stimulating or inhibiting primary bodily functions (e.g., heart rate and blood pressure, body temperature, fluid and electrolyte balance, appetite and body weight, sleep cycle and function of the gastrointestinal tract (other conditions being equal) determined by: (a). The body's posture through the total quantity of proprioceptive impulses impinging on the posterior hypothalamus per unit of time [59]. (b). Facial contraction patterns lead to afferent discharges via the hypothalamic cortical system and interact with cutaneous facial impulses in the cortex [59]. In contrast, the NMES part of the FoK-FIP MBPI builds upon the growing preclinical and clinical evidence that pairing bursts of vagus nerve stimulation with specific movements or sensory events can improve rehabilitation results [55].

- **Benefits** of the FoK-FIP MBPI are achieved through the modulation of reactions by the cognitive force occurring through the EMR consciousness wavefront coupled to the spinal cord and peripheral nervous tissue. These effects correlate with the modulation of neural circuit signaling, including that of the paleospinothalamic tract and a peripheral nervous tissue pathway of the nodose ganglion, with information traveling to the brain stem via the vagus nerve. The automatic and impulsive reactions of the cognitive force correlate with afferent activation of the paleospinothalamic tract and excitatory sympathetic input to the brain. In contrast, the impulsive reaction followed by the reaction with forethought by the cognitive force correlates with a calming parasympathetic outflow through efferent activation. The benefits through the reactions of the cognitive force linked with the activation of the limbic and proprioception centers and the stimulation of the vagus nerve at the cervical level have beneficial effects on the broadcasting for "life" (i.e., interoceptive cognition consciousness).

8. Infrared thermal imaging to test aspects of the FoK-FIP theory

The reaction of the sensitive cognitive force to the interoception of FoK-FIP is the mechanism modulating the cognitive broadcasting of signals occurring through the EMR consciousness wavefront coupled to the spinal cord and peripheral nervous tissue. In the testing environment, a thermal camera receives infrared radiation emitted from the canine participants' cervical, thoracic and lumbar regions, and the system's technology produces radiometric video. Infrared thermal imaging (IRT) is a non-ionizing, non-invasive technique to evaluate the comfort levels of animals (e.g., human and non-human). Through electromagnetic waves, an objective relationship exists between:

- Parts of EMR consciousness wavefront cognitively broadcast by the sensitive cognitive force with "distress."

- Animal models' physiopathological alterations through microvascular changes [60] associated with autonomic arousal during normal vigilance versus hypervigilance (shown by hyperactivity, impulsivity, and inattention).

- Thermal windows show aspects of chunking and stimulus organization of pixels by the cognitive force that produces components of interoceptive cognition consciousness (envisioned through the components map model with IMs). In this process, a radiometric thermal imaging system (i.e., Teletherm TIGER-4 infrared thermal imager) detects thermal radiation as a particular property of the EMR consciousness wavefront.

9. Conclusions

This chapter has introduced the FoK-FIP MBPI and has shown how the FoK-FIP theory contributes broadly to the scientific literature, including theoretical and classical theory, empirical research, biology, and medical diagnosis, and intervention.

Acknowledgements

The author would like to thank Graham J. Rockley for his support, including the technical that expedited the learning of the Teletherm Tiger 4 Cub Infrared Thermal Imaging System.

Conflict of interest

The author declares no conflict of interest.

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