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Article

The Existential Neurology of Meaning: A Predictive Processing Synthesis of Längle's Existential Analysis and Frankl's Logotherapy

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Abstract

The therapeutic systems of Viktor Frankl's logotherapy and Alfred Längle's existential analysis, both originating from Vienna, represent a significant yet historically divergent approach to psychotherapy. While Frankl's work centers on the "will to meaning" as a transcendent, top-down force, Längle's "Personal Turn" emphasizes the immanent, bottom-up work on biographical and emotional foundations. This paper leverages the Predictive Processing Framework (PPF) and the Resonance-Inference Model (RIM) as a metatheoretical bridge to synthesize these seemingly contradictory views. We argue that Frankl's "will to meaning" functions as a Master-Prior, a high-level generative model that provides a coherent, purpose-driven narrative, thereby minimizing existential free energy. Längle's four fundamental motivations, in turn, are reinterpreted as hierarchically lower-level priors that must first achieve a state of minimal free energy before the highest-level Master-Prior can be stably activated. This synthesis resolves the historical aporia by demonstrating that Längle's process-based methodology provides the necessary neurobiological and psychological conditions for the sustained actualization of Frankl's philosophical vision. The resulting "existential neurology of meaning" presents a holistic, neurobiologically grounded model that integrates the spiritual, psychological, and bodily dimensions of human existence.

Keywords: existential analysis; logotherapy; predictive processing; neuroscience; existential psychology; meaning; Viktor Frankl; Alfred Längle; free energy principle; resonance-inference model

Public Significance Statement

Mental health challenges such as anxiety and depression often stem from a profound sense of meaninglessness or inner conflict. This paper bridges two major schools of existential psychotherapy to explain how finding meaning in life is not just a philosophical idea but a concrete brain process. By combining Viktor Frankl's inspiring idea of the "will to meaning" with Alfred Längle's practical methods for emotional healing, this research shows that inner peace and purpose are achieved by a step-by-step process of resolving inner conflicts. This model offers a new way to understand why therapy works and could lead to new, more effective treatments that help people build a stable foundation for a meaningful life.

Introduction: From Vienna to Neuroscience

Historical Roots and the Need for a New Direction

The 20th century's psychotherapy landscape was profoundly shaped by three schools that originated in Vienna. Sigmund Freud founded psychoanalysis with the will to pleasure as humanity's primary motivation (Freud, 1920), positing that human behavior and psychological illness are rooted in unconscious, instinctual desires. Alfred Adler followed with individual psychology, placing the will to power at its core, viewing the pursuit of recognition and the overcoming of inferiority as the

driving force (Adler, 1930). Frankl, initially a student of Adler, radically broke with these schools as early as 1926. He rejected their reductionist approach, which confined human beings to their past and their drives. In sharp contrast, Viktor Frankl established logotherapy, defining the will to meaning as humanity's deepest motivational force (Frankl, 1985). Frankl's approach elevated the individual beyond their instinctual and psychological conditionings into a spiritual dimension, which he termed the Noetic.

This revolutionary stance—that an individual can maintain an inner freedom of attitude even in the face of the most extreme circumstances—found its dramatic and profound validation in Frankl's own traumatic experience in the concentration camps. There, he observed how people who found meaning in their suffering—be it in surviving for a loved one or in completing a work—developed an inner strength that saved them from collapse. This ability to distance oneself from external constraints and take a conscious stance towards life's circumstances is the essence of Frankl's concept of self-transcendence and the defiance of the spirit. Logotherapy is thus not merely a philosophical reflection but an existential system that empowers individuals to overcome their fate by endowing it with meaning.

Yet, as profound and inspiring as Frankl's philosophy was, his methodology lacked systematic rigor (Längle, 2005). His close companion and student, Alfred Längle, recognized that Frankl's approaches were often insufficient when a person could rationally find meaning but was internally unable to enact it. The engagement with biographical wounds, emotional blockages, and internal conflicts appeared to be a necessary step that Frankl had rejected as "psychologistic." Frankl feared that a deeper focus on the inner life would lead away from what he considered the essential, transcendent search for meaning. He saw in self-experience, in working with emotions and psychodynamics, a return to the drive and power-oriented thinking he had fought against his entire life. This divergence led to the "Personal Turn" by Längle and ultimately to a schism between the two schools (Längle, 2005). However, Längle created a necessary foundation for clinical practice by expanding existential analysis to include the dimension of personal experience and biographical work.

The Resonance-Inference Model (RIM) as a Unifying Theory

The Resonance-Inference Model (RIM) is a new heuristic meta-model of change (Leidig, 2025a) built upon six established theories and concepts that synergistically emerge to explain change in a novel way. A central pillar of this model is the Predictive Processing Framework (PPF) (Clark, 2016; Friston, 2010), which views the brain not as a passive stimulus-response machine but as a hierarchical, generative model of the world. The brain continuously generates predictions (priors) about incoming sensory data and attempts to minimize the discrepancy between these predictions and actual reality. This discrepancy, known as prediction error or "free energy," is a measure of a system's uncertainty or surprise. From this perspective, psychological suffering can be interpreted as a state of chronically high free energy, where a person's internal predictions massively diverge from their actual experiences. This process, by which the system minimizes uncertainty, is called active inference.

To illustrate: When we sit on a chair, our brain expects the sensory signal of contact based on past experiences (priors). If this signal arrives, the prediction error is low. If the chair unexpectedly collapses, the prediction error is enormous. At this moment, the system experiences high free energy—a state of maximal surprise accompanied by feelings of confusion and anxiety. This state forces the brain to update its world model. The RIM describes a constant, dynamic interplay between top-down processes (predictions and higher-level beliefs) and bottom-up processes (sensory data and prediction errors). This approach allows for the translation of seemingly abstract existential phenomena into a process-based, neurobiologically grounded framework. An "existential vacuum" could thus be understood as a state in which the system can no longer generate a coherent, meaning-giving higher-level prediction, leading to chaos and dissonance. It lacks a coherent life prior that brings the multitude of contradictory sensory data and feelings into a higher order.

Research Objective and Research Question

This paper aims to use the Resonance-Inference Model as a metatheoretical bridge to unify existential psychotherapy. The central research question is: How can the apparent contradictions between Frankl's transcendental understanding of meaning and Längle's immanent, process-oriented existential analysis be resolved in the RIM context? It is argued that a synthesis of the two approaches creates a more holistic model of psychotherapeutic change that integrates both the top-down role of the spirit (Frankl) and the necessary bottom-up role of the psychophysical system (Längle). This approach resolves the apparent aporia by showing that Längle's four fundamental motivations provide the necessary hierarchically lower-level foundations for the stable and sustainable unfolding of Frankl's "will to meaning." A person tormented by existential anxieties (FM1) or self-doubt (FM3) is internally preoccupied with minimizing massive prediction errors that bind their psychological resources. In this state, the highest, abstract master-prior of meaning-making cannot function effectively. Existential analysis thus becomes a coherent, scientifically grounded system that connects the philosophical vision with the procedural and neurobiological realities of human experience.

Viktor Frankl's Logotherapy in the RIM Context

The "Will to Meaning" as a Master-Prior: Frankl's Philosophy as Top-Down Control

In logotherapy, the will to meaning is at the center of human existence (Frankl, 1985). From the perspective of the Resonance-Inference Model (RIM), this will can be understood as the highest, superordinate Master-Prior of the human system. A Master-Prior is the deepest and most fundamental belief or expectation that our brain generates about the world and our place in it (Leidig, 2025a). It serves as the primary top-down control that gives direction and significance to all other hierarchically subordinate predictions—be they bodily sensations, emotional reactions, or social behaviors. Frankl's concept of meaning is therefore not just an abstract philosophical idea but a dynamic, neurobiological mechanism.

A person who sees meaning in their life has a strong Master-Prior that organizes the constant sensory inputs and internal prediction errors into a coherent framework. Take the example of an artist who struggles with inner doubts but overcomes their challenges through the deeper conviction of creating something important. The meaning they see in their art functions as a Master-Prior that actively processes and minimizes the negative bottom-up signals (doubt, frustration). Without this Master-Prior, prediction errors from daily work (e.g., failed drafts) would dominate the system and lead to a state of high free energy, such as anxiety and despair (Friston & Clark, 2022). Frankl's logotherapy thus provides the philosophical vision of this highest prior and shows how it shapes the human psyche from top to bottom.

This top-down control can be seen as a kind of "existential grammar." Just as the grammar of a sentence brings individual words into a meaningful structure, the Master-Prior of meaning-making organizes the myriad experiences, feelings, and actions of a person into a superordinate, consistent narrative. The absence of this Master-Prior leaves the psyche in a state of existential gibberish. Frankl emphasized that meaning is not invented but found. From an RIM perspective, this means that the Master-Prior is not arbitrarily generated but arises from a resonant interaction with the world. A therapeutic process in logotherapy therefore aims to help the individual recognize these resonant opportunities and build the corresponding priors (Längle, 2005).

Existential Vacuum and the "Defiance of the Spirit": How Frankl's Concepts Explain the Reduction of Free Energy

The existential vacuum is a central phenomenon in Frankl's teachings and describes a state of meaninglessness often accompanied by feelings of boredom, indifference, and emptiness (Frankl, 1985). In the RIM context, this state can be interpreted as a system that lacks a compelling Master-Prior. Without a strong, meaning-giving prediction, the system's ability to effectively process sensory

data and internal conflicts diminishes. Free energy increases as the discrepancy between internal expectations and external reality becomes unbearable (Friston, 2010). The person has no overarching framework to explain the abundance of sensory impressions and emotional fluctuations, which leads to a state of dissonance. This imbalance can manifest in behavioral patterns such as conformism or compensation, which can be seen as attempts to reduce free energy by orienting oneself to external predictions (e.g., conforming to societal expectations).

In contrast, Frankl's concept of the "defiance of the spirit" is active inference par excellence. It describes the human ability to distance oneself from inner and outer conditionings and take a stance (Frankl, 1985). From the RIM perspective, this is a conscious act of Master-Prior revision. Instead of passively enduring the prediction errors generated by a traumatic reality, the person makes a conscious decision for a meaning. For example, by choosing to preserve their dignity, concentration camp survivors created a new, superordinate prior that actively reinterpreted the overwhelming sensory data (suffering, cold, hunger). This act of self-transcendence minimized free energy by adjusting internal expectations and creating a new order.

The "defiance of the spirit" is therefore not naive optimism but a highly effective, cognitive process of active inference. It allows the individual to evolve from being a "slave of their circumstances" to a "shaper of their attitude" by regaining control over the highest prior levels. Frankl's famous quote, "When we are no longer able to change a situation, we are challenged to change ourselves," describes exactly this process: The system has realized that a reduction of free energy through external manipulation (active inference in the sense of acting in the world) is not possible, which is why it turns inward instead and revises its internal models, its priors. This conscious choice of a new prior structure is a noetic act that underpins the existential freedom of the human being.

Frankl's Stance on Feelings, Psyche, and Biography: A Noetic Analysis of His Demarcation and What It Means in the RIM Context

Frankl's demarcation from engaging with the psyche and biography was a core element of his teaching. He saw the noetic (spiritual) dimension as the decisive field where a person finds their freedom and considered the preoccupation with psychological and emotional phenomena to be "psychologistic" and reductionist. From the RIM perspective, this demarcation can be understood as an attempt to preserve top-down control at all costs. Frankl argued that an excessive focus on bottom-up signals (feelings, drives, biographical traumas) would prevent the system from establishing the meaning prior.

However, the RIM analysis shows that a stable top-down structure can only be built on a solid bottom-up foundation. Massive prediction error resulting from traumatic or biographical wounds must also be minimized, as it otherwise constantly undermines the higher-level Master-Priors. Frankl's method of paradoxical intention can be seen here as an attempt to consciously create prediction errors to force the system to reorganize (Frankl, 1985). By deliberately inducing anxiety, the prediction error is exaggerated, and the system is forced to generate a new, less anxious prediction. In the RIM context, Frankl's focus on the spiritual attitude does not negate the relevance of the psyche but emphasizes the absolute priority of top-down control.

Frankl's demarcation was therefore not a rejection of psychodynamics per se but a setting of priorities that, in the sense of the RIM, can be understood as a focus on the highest hierarchical levels of the prior system (Leidig, 2025a). He argued that healing must primarily take place on the noetic level, as meaning-making controls the psychophysiological processes from above. A person who has meaning can better deal with their anxieties and their past, as the superordinate meaning prior processes prediction errors from the depths of the system more effectively. Frankl's view that a person is not just a product of their past but also the creator of their future is a profoundly prospective attitude. He shifted the focus away from the "What happened?" question to the "What is it for?" question. This orientation towards the future and the search for meaning is, in the RIM context, the ultimate form of reducing uncertainty and free energy.

Alfred Längle's Personal Existential Analysis: A Neurobiological Foundation

The "Personal Turn": The Break with Frankl and the Reorientation of Existential Analysis

Alfred Längle's "Personal Turn" marks a decisive break with Viktor Frankl's original logotherapy and a reorientation towards a holistic, phenomenological approach. While Frankl saw meaning as an objective, transcendent entity to be discovered, Längle shifted the focus to the subjective experience and the human ability to encounter meaning with "inner consent." This departure is of central importance from the perspective of the Resonance-Inference Model (RIM), as it shifts therapeutic work from a primarily top-down oriented search for meaning to a bottom-up process of foundation-building. It was a departure from a purely noetic view of the human being towards a comprehensive integration of the psychophysical level (Längle, 2005).

Längle recognized that the "will to meaning" (Frankl, 1985) is often hindered by biographical wounds, emotional blockages, or internal conflicts. A system cannot stably establish a Master-Prior at the highest level if there are chronic prediction errors and high free energy at the basal levels. This can be compared to the metaphor of a house: The roof, which represents meaning, cannot be stable if the foundation and walls are brittle. Längle's radical conclusion was that healing must begin at the foundation. For this reason, he developed the "Personal Turn," which leads the path to meaning not only outward but first inward. The goal is not primarily the finding of meaning but the strengthening of the person themselves, so that they are even capable of existential self-realization. The therapeutic task thus shifts from the direct search for meaning to the processing of the fundamental existential motivations, in order to create the internal conditions for a meaningful life.

The Four Fundamental Motivations as Hierarchical Priors: A Detailed RIM Interpretation of the Four Existential Pillars

Längle's model of the four Fundamental Motivations (FMs) offers a precise, hierarchical map of human existence that fits seamlessly into the RIM (Längle, 2005). Each FM can be understood as a hierarchical prior that builds upon the level below it, with its success being a prerequisite for the next stage.

FM 1: The Yes to the World. The fundamental question, "Can I be?", corresponds to the most fundamental prior for safety and security. This prior is neurobiologically connected to survival circuits such as the amygdala, responsible for threat detection, and the hippocampus, which stores contextual memories. A disturbance here manifests as chronic anxiety, panic attacks, or a fundamental distrust, as the system is unable to anticipate the environment as safe. Free energy is maximal because even basal predictions about the environment fail, and the system remains in a continuous state of "surprise." Therapy must start here to reduce the precision-weighting of threat-related predictions and recalibrate the brain's generative model.

FM 2: The Yes to Life. The fundamental question, "Do I like to live?", is a prior for encountering value and emotional resonance. Neurobiologically, this corresponds to the reward system (dopaminergic pathways) and the oxytocin system, which control the motivation for interpersonal relationships and the experience of joy. Deficits in this motivation lead to existential emptiness and depressive moods, as the system cannot process sensory data from the world as emotionally valuable. The "lust for life" as a prior is disturbed. In the RIM context, this means that the system cannot generate reliable predictions about the positive consequences of actions, which leads to anhedonia and apathy (Clark, 2016).

FM 3: The Yes to Oneself. The question, "Am I allowed to be who I am?", is the prior for authenticity and self-worth. It refers to the neural networks of self-reference, such as the medial prefrontal cortex and the posterior cingulate cortex. When this prior is disturbed, the person experiences shame and self-doubt. Dissonance arises from the conflict between the internal ideal self-image and the external reality of social rejection, leading to massive prediction errors. These "errors" can be so painful that the system tries to avoid them by turning away from its authenticity and establishing an apersonal "functioning."

FM 4: The Yes to Meaning. Only on these three foundations can the highest prior of meaning, "What is it good for?", be sustainably activated. This prior can only fully unfold its top-down control when the underlying levels of existential security, emotional value, and self-worth are stable. Längle's model thus resolves Frankl's apparent hierarchy aporia. It is not about placing meaning in a hierarchy of needs but about creating the necessary psychophysical conditions for its stable realization. This highest prior, which gives the system orientation and purpose, is thus conditional upon the successful establishment of the preceding three priors.

Feelings as "Signposts": The Neurobiological Basis of Encountering Value

In contrast to Frankl, who often saw feelings as psychophysiological reaction patterns, Längle considered them "signposts" (Längle, 2005) that provide access to values. From a neurobiological perspective, this can be understood as an active inclusion of bottom-up signals. The brain interprets feelings as somatic markers that anticipate the emotional consequence of a situation (Damasio, 1994). The encounter with value is therefore a process in which the body functions as a resonance space and generates subtle physiological reactions (e.g., a feeling of warmth, spaciousness, or tightness in the chest) that are reported to the brain as reliable bottom-up signals. These signals help the system update its priors and determine what is truly valuable to the person.

The neurobiological basis for this is interoception, the perception of one's own body state. Interoceptive signals are processed in brain regions such as the insular cortex (Insula) and the cingulate cortex. They inform the brain about how a situation "feels" and form the basis for a "felt sense of being." Längle's approach explicitly integrates this bottom-up information into the therapeutic process, which distinguishes it from Frankl's noetic focus. Instead of viewing feelings as an obstacle, they are understood as an integral part of the system for dissonance reduction and meaning-making. They offer a direct, precognitive access to one's values.

"Existential Grounding": The Role of Corporeality as an Anchor Point for Dissonance Reduction

The concept of "Existential Grounding" in Längle (2005) is a direct therapeutic application to reduce the dissonance resulting from a disturbed fundamental motivation (especially FM 1). It uses corporeality as a central anchor point and a source of undeniable sensory data. From the RIM perspective, this involves the conscious increase of the precision-weighting of the body's bottom-up signals. In states of high free energy (e.g., in anxiety disorders), the system is often caught in a cycle of dysfunctional, anxiety-filled predictions. These predictions are given an excessively high precision-weighting, while the reliable signals from the body (breath, ground contact) are ignored or misinterpreted.

Through mindful body awareness exercises, such as the conscious perception of breath or contact with the ground, attention is deliberately directed to these reliable sensory data. This increases their precision-weighting in the generative model. The focus on the "here and now" forces the brain to correct its excessive, anxiety-filled predictions and reduce free energy. This process leads to a recalibration of the internal models, which reorganizes the system from the ground up and creates a stable starting point for therapeutic change. Existential grounding is thus a neurobiologically founded process that not only alleviates symptoms but also restores basic existential security by bringing internal predictions back into alignment with external reality.

The Synthesis: Frankl's Vision, Längle's Method

The Synthesis as a Solution to the Hierarchy Aporia: How Frankl's and Längle's Approaches are Complementary

The apparent contradiction between Frankl's transcendental understanding of meaning and Längle's hierarchical model of Fundamental Motivations (FMs) can be convincingly resolved through the lens of the Resonance-Inference Model (RIM). Frankl (1985) vehemently rejected the classification of meaning into a needs-oriented hierarchy. His will to meaning is an ontological force that permeates

the entirety of human existence and cannot be placed as just another step after physiological or psychological needs. The RIM confirms this stance by interpreting Frankl's meaning as a superordinate, highly abstract Master-Prior (Leidig, 2025a). This Master-Prior serves as a kind of existential grammar that gives the system a superordinate direction and generates predictions about the purpose of life. It is the supreme control command that initiates a coherent self-organization of the entire system, whose fundamental goal is the minimization of existential dissonance.

Längle's FMs, in turn, are not hierarchical steps on the path to meaning but the necessary foundations upon which the Master-Prior can be stably built. Each of the four FMs corresponds to a basal prior that must ensure a minimal amount of free energy before the system can focus its resources on the superordinate question of meaning. A chronic disturbance at one of the FMs, such as chronic anxiety (FM 1), existential emptiness (FM 2), or self-doubt (FM 3), leads to such massive and persistent prediction errors that the system becomes overwhelmed (Clark, 2016). The free energy remains so high that the Master-Prior of meaning-making cannot be activated and stabilized efficiently. The system is caught in a vicious cycle of dissonance because it binds all cognitive and emotional resources to cope with the basal existential uncertainties. It is as if one were trying to program a navigation system for a long journey (Master-Prior) while the engine is constantly sputtering (FM 2) and the tires are flat (FM 1). Without the functioning foundations, the best vision cannot be translated into reality.

Frankl's logotherapy thus offers the philosophical vision of a meaning-oriented life that elevates the human being beyond their psychophysical conditions. Längle's existential analysis, on the other hand, provides the anthropological and methodological foundations to operationalize this vision in therapeutic practice. The synthesis shows that Längle's model of the FMs creates the necessary bottom-up conditions that first make Frankl's top-down control possible. Frankl's philosophy and Längle's method are therefore two complementary aspects of the same process of existential dissonance reduction that mutually complement and condition each other. The synthesis leads to a holistic, process-based understanding that comprehensively integrates both the spiritual search for meaning and the human being's psychological and bodily reality into psychotherapeutic work.

Therapeutic Implications: How Personal Existential Analysis (PEA) Acts as a Process-Based Model of Dissonance Reduction

Personal Existential Analysis (PEA) (Längle, 2005) can be understood as a process-oriented model that systematically reduces free energy at all levels of the human system. Each step of PEA aims at a targeted prior revision and the minimization of prediction errors.

1. *PEA 1 ("The Impression")*: This first step corresponds to the conscious increase in the precision-weighting of bottom-up signals. The therapist guides the client to perceive the raw, primary feelings and bodily sensations associated with a situation. Instead of suppressing or avoiding these signals, the system learns to process them as important information. This newly gained sensitivity to the inner, often ignored bottom-up data is the first step towards dissonance reduction, as the discrepancy between the internal model and the real sensations is made conscious. This allows the client to shift from a purely cognitive world of thought into a "felt sense of being," which is a crucial prerequisite for the following steps.

2. *PEA 2 ("Taking a Stance")*: This central step is the core of Prior Revision. The client enters into an inner dialogue to reconcile the newly perceived feelings and sensations (bottom-up input) with existing, often dysfunctional existential priors. This process of evaluation and weighing is an iterative mechanism for the re-generation of hypotheses about the self and the world. The conscious act of taking a stance is the choice of a new, more functional prior that sustainably reduces free energy by creating a better fit between the internal model and lived reality. This process is the practical application of the Self-Distancing described by Frankl, in which the person consciously takes a position on their feelings and thoughts, and Self-Transcendence, by orienting oneself towards values beyond one's own ego.

3. *PEA 3 ("The Expression")*: The final step is the implementation of the new attitude into concrete action, which is called Active Inference in the RIM. The new internal stance leads to a new behavior, which in turn generates new, less dissonant sensory data from the environment. This new data confirms the reorganized self-model and the revised priors, thereby stabilizing them sustainably. The person steps out of the passive state of dissonance and becomes an active shaper of their reality, changing their environment to better align with their internal predictions. This positive feedback loop strengthens the new priors and allows the system to remain in a state of minimal free energy.

Neurobiological Evidence: Possible Research Approaches and the Correlates of Existential Phenomena

The integration of existential analysis and RIM opens up a variety of concrete, empirically testable research questions. Future studies could aim to isolate and quantify the neurobiological correlates of existential concepts. Functional imaging methods such as fMRI or EEG measurement of brain connectivity could uncover the neural signatures of the four fundamental motivations.

FM 1 (Being Able to Be): A successful therapy at this level could manifest in increased top-down control by the prefrontal cortex (PFC) over limbic regions like the amygdala. At the same time, changes in the activity of the periaqueductal gray (PAG) and the hypothalamus, which are involved in threat and survival responses, could be observed. A reduction in excessive activity in these regions would indicate a successful reduction of dissonance and the restoration of a basic sense of trust.

FM 2 (Liking to Live): The neurological evidence for a successful encounter with value could be shown in an increased activation of the insular system and the medial prefrontal cortex (mPFC), which are responsible for processing emotions, empathy, and interoceptive signals. The therapy could increase connectivity between these regions and the reward centers (e.g., the ventral striatum), which would facilitate the experience of joy and connectedness.

FM 3 (Being Allowed to Be Oneself): The increase in self-acceptance could be associated with decreased activity in brain regions linked to the processing of shame and social rejection, such as the anterior insula and the medial PFC (Damasio, 1994). Additionally, a successful therapy could bring about a stronger integration of networks associated with self-reference (Default Mode Network) and social cognition (Theory of Mind).

FM 4 (Meaning): The Master-Prior of meaning could be linked to increased connectivity in networks for abstract planning and top-down control, particularly with the dorsolateral prefrontal cortex (dlPFC). The therapeutic interventions of existential analysis would thus not be limited to a philosophical or clinical explanatory level but could also be understood and validated at the level of neuronal signal processing. The existential neurology of meaning provides an interdisciplinary framework that bridges the gap between the subjective, phenomenological world and the objective, neurobiological processes.

Conclusions and Outlook

Summary: The Existential Neurology of Meaning as a Holistic Model

This paper has viewed the existential psychotherapy of Viktor Frankl and Alfred Längle through the prism of the Resonance-Inference Model (RIM) to resolve their apparent contradictions and create a coherent, neurobiologically founded synthesis. Frankl's logotherapy offers the philosophical vision of a life that, through a Master-Prior of meaning, points beyond its psychophysical conditions. This will to meaning is the highest top-down control that gives the system superordinate direction and stability. Längle's Personal Existential Analysis, on the other hand, provides the anthropological and therapeutic methods to create the necessary bottom-up conditions for the sustainable activation of this Master-Prior. His four fundamental motivations are the existential foundations that must ensure a minimal amount of free energy in the system. Only when these levels can be affirmed is the system capable of freeing itself from existential dissonance and turning to the question of meaning.

The existential neurology of meaning is thus more than a purely theoretical exercise. It reconciles Frankl's transcendent understanding of meaning with Längle's immanent, process-oriented psychology and offers a holistic framework that connects the spiritual search for meaning with the human being's psychological and bodily reality. The resulting model explains that healing and existential change can be achieved not only through cognitive insight but through the targeted reduction of dissonance at all hierarchical levels of human existence. It provides a profound explanation for how a person moves from a state of inner fragmentation and lostness to a feeling of coherence and connectedness. By linking the philosophical and therapeutic levels with the neurobiological dynamics of prediction minimization, the model constitutes a comprehensive reference framework for modern psychotherapy.

Limitations and the "Explanatory Gap" of Consciousness: Critique and Demarcation

Although the RIM provides a compelling mechanistic explanation for the functioning of the brain and the psyche, it reaches the limits of the so-called "explanatory gap" of consciousness (Chalmers, 1995). The model can explain how subjective perceptions and feelings arise from the reconciliation of predictions and sensory data. However, it cannot explain the phenomenal quality of experience—what it feels like to be an existential being, to experience joy, fear, or meaning. These qualia remain outside the purely process-based explanatory framework. The brain's ability to, for example, interpret the wavelength of light as the color "red" is mechanistically describable. However, the question of why we experience the sensation of "red" at all remains unsolved. This limitation is crucial and must be explicitly acknowledged to maintain scientific integrity. Existential phenomenology, with its unprejudiced description of subjective experience, therefore remains a necessary, complementary tool to grasp human existence in its depth and complexity. Phenomenology fills the gap that purely mechanistic explanations leave behind by putting the experience, which is produced by neuronal processes, at the center. It is the voice of the patient that conveys the "what it means" (Frankl, 1985) of suffering to the therapist.

Outlook: Future Research Questions and Relevance for Modern Psychotherapy

The integration of Längle's existential theses into the Predictive Processing Framework opens up a variety of new research fields. Future empirical studies could focus on validating the neurobiological correlates of the fundamental motivations. Functional imaging methods (fMRI, EEG) could be used, for example, to isolate and quantify the neural signatures of existential anxiety (FM 1), existential emptiness (FM 2), and shame (FM 3). Furthermore, a more detailed analysis of Existential Grounding in the context of embodiment and somatic markers would be promising. It could be investigated how conscious grounding changes the precision-weighting of bodily bottom-up signals and what effects this has on higher-level cognitive and emotional states. The application of this synthesized model to other psychotherapeutic schools and disorders could also enable a deeper understanding of the transdiagnostic change processes. The RIM provides a neurobiological bridge that embeds existential psychotherapy in modern scientific discourse. It empowers the individual not only to be freed from symptoms but to strengthen the existential foundations of their life, thereby achieving an inwardly consenting and personally responsible attitude. In addition, the model holds great potential for the development of new, technology-assisted interventions. For example, biofeedback and mindfulness apps that promote "Existential Grounding" could be specifically aimed at reducing free energy. The integration of AI systems that use conversation with the client to identify dysfunctional priors could further increase the efficiency of therapeutic work in the future. The model presented here is not just a scientific thought experiment but a promising way to transform psychotherapy.

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